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Volume 41, Number 12 **December 1961**

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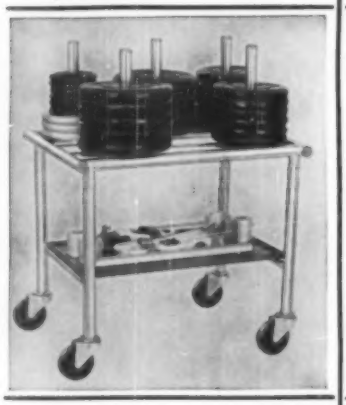

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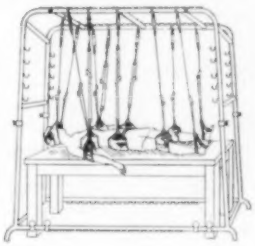

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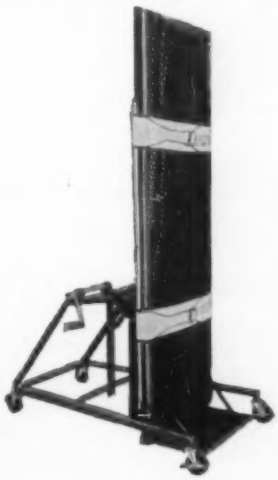

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State Board Examinations—1961

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Arizona: Apply to June D. Walker, Sec., Board of Physical Therapy Examiners, 1838 N. 37th Pl., Phoenix.

Arkansas: Apply to Joe Verser, M.D., Sec., State Medical Board, Harrisburg.

California*: Apply to Board of Medical Examiners, 1021 "O" St., Room A547, Sacramento 14. Exams in Los Angeles and San Francisco. SPECIFY REGISTRATION FORM.

Colorado*: Apply to Adelaide Doing, Sec., Board of Physical Therapy, 4200 E. 9th Ave., Denver 20.

Connecticut*: Apply to Edward O'Donnell, Sec., Board of Examiners for Physical Therapists, 117 Osborn Ave., New Haven. Exams in Hartford.

Delaware*: Apply to Examining Board of Physical Therapists, 302 Waverly Rd., Wilmington 3.

Florida*: Apply to Homer L. Pearson, M.D., Sec., Board of Medical Examiners, 901 N.W. 17th St., Miami 36.

Georgia: Apply to C. L. Clifton, Joint Sec., State Examining Boards, 224 State Capitol, Atlanta.

Hawaii: Apply to Department of Health, P.O. Box 3378, Honolulu 1.

Illinois*: Annual exam, third Friday, Oct. File 15 days in advance. Apply to Judge Vera M. Binks, Director, Department of Registration and Education, Capitol Bldg., Springfield. Exams at 160 N. La Salle St., Chicago.

Indiana: Annual exam, mid-June. File by May 15. Apply to Ruth V. Kirk, Exec. Sec., Board of Medical Registration and Examination, 538 K. of P. Bldg., Indianapolis 4. Exams at Indiana University Medical School, 1100 W. Michigan Ave., Indianapolis.

Kentucky*: Semiannual exams, April and Oct. File by Mar. 1 or Sept. 1. Apply to Agnes Shehan, Sec., Board of Physical Therapy, Kentucky Crippled Children Commission, 982 Eastern Parkway, Louisville 17. Exams in Frankfort.

Maine: Thrice yearly exams. Apply to Daniel Hanley, M.D., Sec., Board of Registration in Medicine, P.O. Box 637, Brunswick. Exams at Portland City Hall, Portland; July exam at State House, Representative Chambers, Augusta.

Maryland*: Apply to Board of Physical Therapy Examiners, 301 W. Preston St., Baltimore 1.

Massachusetts*: Semiannual exams, April and Oct. File 2 weeks in advance. Apply to Board of Registration in Medicine, State House, Boston 33. Exams at State House, Boston.

Minnesota: Apply to Board of Medical Examiners, 230 Lowry, Medical Arts Bldg., St. Paul 2.

Montana: Apply to T. L. Hawkins, M.D., Sec., Board of Medical Examiners, 555 Fuller Ave., Helena.

Nebraska: Apply to R. K. Kirkman, Dir., Department of Health, Bureau of Examining Boards, Room 1009, State Capitol Bldg., Lincoln.

Nevada*: Semiannual exams. Apply to Margaret Heidrich, Board of Physical Therapy Examiners, 506 Humboldt St., Reno. Exams in Reno or Las Vegas.

New Hampshire*: Apply to Edward W. Colby, M.D., Sec., Board of Registration in Medicine, 61 S. Spring St., Concord. Exams held at State Health Bldg., 61 S. Spring St., Concord.

New Mexico: Apply to Registrar, Physical Therapists' Licensing Board, Box 2206, Santa Fe.

New York: Semiannual exams, June and Dec. File 30 days in advance. Graduates of registered curriculum apply to John W. Paige, Chief, Bureau of Professional Examinations and Registrations, 23 S. Pearl St., Albany 7; graduates of non-registered curriculum apply to Robert C. Killough, Jr., Assistant Commissioner for Professional Education, 23 S. Pearl St., Albany 7. Exams in Syracuse and New York City.

North Carolina*: Semiannual exams. Apply to Edith M. Vail, Sec., Examining Committee of Physical Therapists, Dept. of Physical Therapy, N. C. Baptist Hospital, Winston-Salem.

North Dakota*: Exams in Jan. and July. File 1 month in advance. Apply to M. Eileen McEown, Sec., Examining Committee of Physical Therapists, 623 First Ave. S.E., Minot.

Ohio: Apply to Herbert M. Platter, M.D., Exec. Sec., State Medical Board, 21 W. Broad St., Columbus.

Oklahoma: Apply to Lucy Haidek, Exec. Sec., Board of Medical Examiners, Braniff Bldg., Oklahoma City. Exams at Board of Medical Examiners, Braniff Bldg., Oklahoma City.

Oregon*: Apply to Board of Health, 1400 S.W. 5th Ave., State Office Bldg., Room 866, Portland 7.

Pennsylvania*: Semiannual exams, Jan. and July. File Dec. 15 or June 1. Apply Mrs. Alva R. Cockley, Sec., Board of Medical Education and Licensure, Box 911, Harrisburg. Jan. exam in Philadelphia; July exam in Philadelphia and Pittsburgh.

South Carolina*: Apply to Dorothy B. Allen, Board of Examination and Registration of Physical Therapists, Physical Therapy Dept., Columbia Hospital, Columbia 14.

South Dakota*: Apply to John C. Foster, Exec. Sec., Board of Medical and Osteopathic Examiners, 300 First National Bank Bldg., Sioux Falls.

Tennessee*: Annual exam, second Monday in June. File one month in advance. Apply to Board of Medical Examiners, 1633 Exchange Bldg., Memphis. Exams held in Nashville.

Utah*: Annual exam first Tuesday in May. File two weeks in advance. Apply to Frank E. Lees, Director, Department of Business Regulation, Division of Registration, Room 318A, State Capitol Bldg., Salt Lake City.

Vermont*: Apply to Sophie Myers, Sec., Board of Physical Therapy Registration, De Goesbriand Memorial Hospital, Burlington.

Virginia*: Semiannual exams, Feb. and Sept. Apply to Russell M. Cox, M.D., Sec., Board of Medical Examiners, 509 Professional Bldg., Portsmouth. Exams in Richmond.

Washington*: Annual exam, May. File by April 1. Apply to Professional Division, Department of Licenses, Olympia. Exams in Seattle.

Wisconsin: Thrice yearly exams, April, Mid-Sept. and at discretion of Examining Committee. File 2 weeks in advance. Apply to Emma Zitzer, Sec., Examining Committee for Physical Therapy, 207 N. Brooks St., Madison 5. April exam in Milwaukee; Sept. exam in Madison.

Wyoming: Law enacted in 1961 becomes effective January 1962. When available, information will be published.

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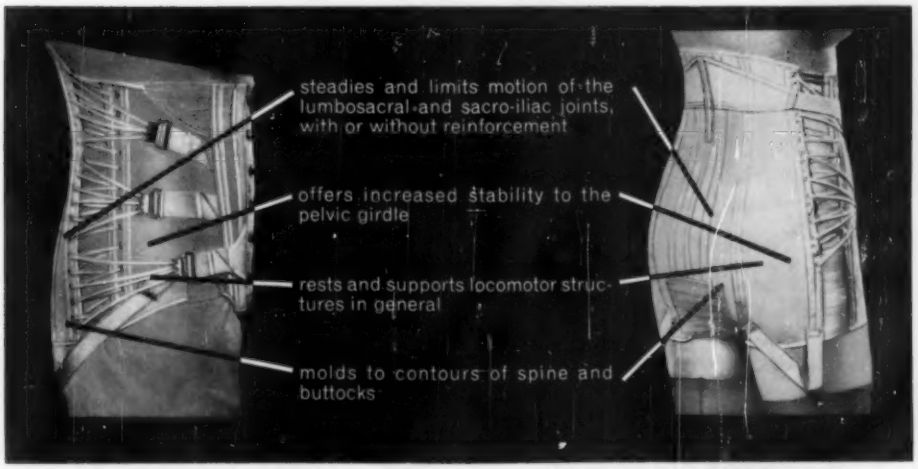
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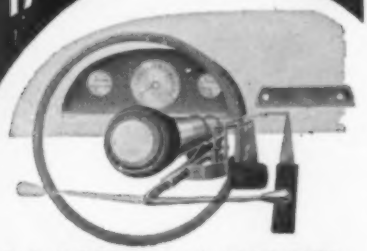

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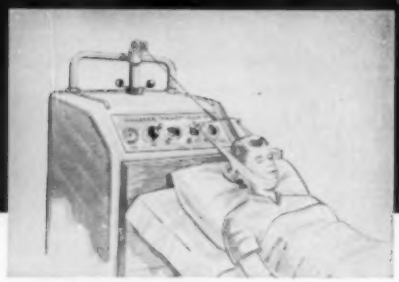

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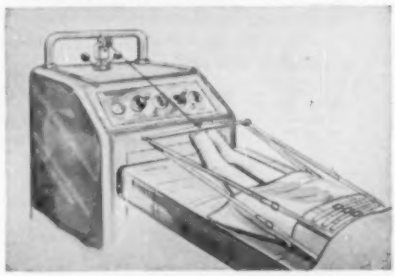

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[1] Gordon, E. E., and Haas, A., *Ind. Med. Surg.*, 28:217, 1959

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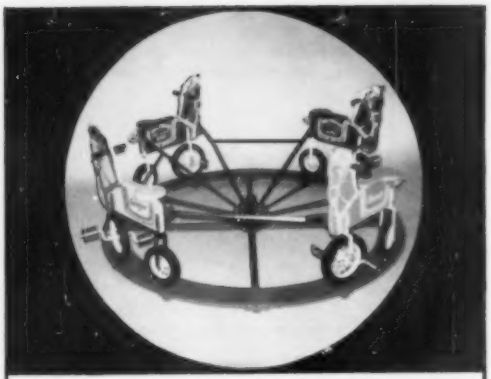

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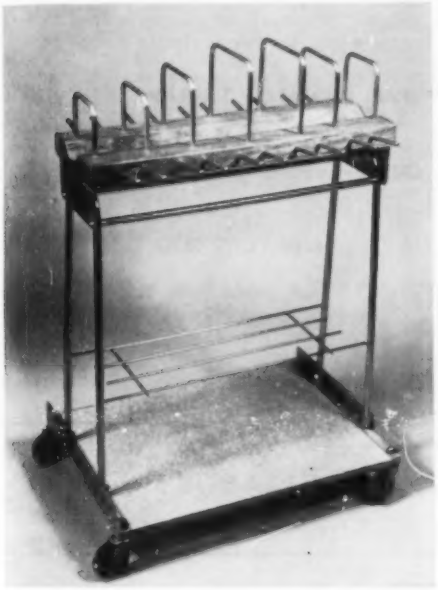

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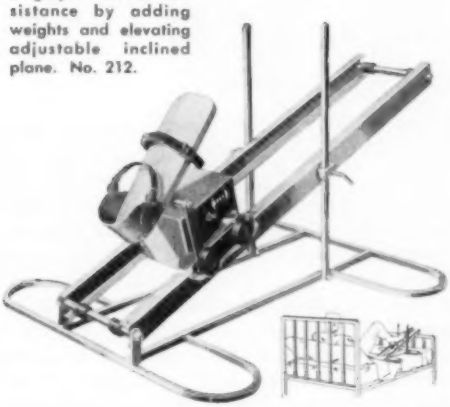

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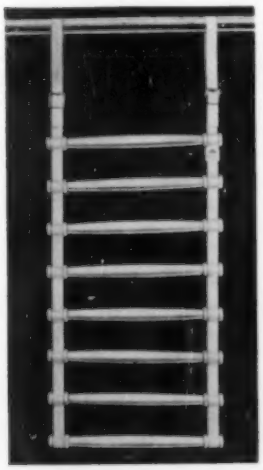

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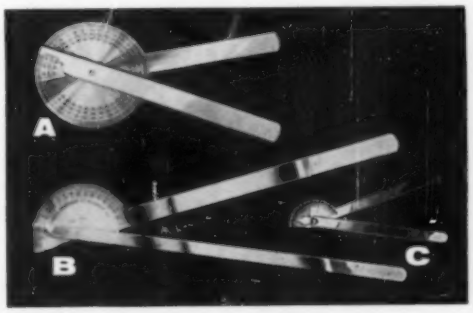

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AROUND THE WORLD

in eighty verbs

I wonder if any of you remember that great scene from "The Wizard of Oz"... when Frank Morgan, portraying a balloon ascencionist, rose majestically from the little fairground in Kansas... and suddenly lost control of his balloon. There he was, floating away majestically, but wondering how he was ever going to get down.

Well, that's sort of the way I've felt a few times this year as I endeavored to fill this space each month. I could feel myself soaring away into all sorts of clouds of nouns, verbs and adjectives... and then wondering how I was go' g to get down again. As I mentioned last January, in the first of this series, I wanted to share some of my thoughts with my many friends in the Physical Medicine profession... rather than just have pages filled with pictures of machines with which you were already familiar.

Each month, when the time comes to write this effort, our Advertising Manager nervously shuffles his graphs and textbooks and tells me that it would be wonderful if we had a picture of a Diathermy somewhere... or at least a drawing of an Ultrasound. Each month I patiently explain to him that the Physical Therapists that read *Physical Therapy Review* are more familiar with these instruments than he ever will be... and, therefore, it sort of becomes somewhat redundant to tell you anything about why we're among the world's largest manufacturers of Physical Medicine equipment.

But, before I get sidetracked on *that*, I did just want to say that it has been very enjoyable to communicate with you this way over the past year. I hope you have found time to occasionally join me on this page... and that you enjoyed reading these just one-tenth as I enjoyed writing them.

I'd like to try it again next year... or at least, I'm considering it. If you have just a moment, I would very much appreciate hearing from you... by letter or postcard... and let me know what you think. Would you prefer seeing straight product ads?... or do you like this type better? (And, I promise to abide by your decision!)

But, comes what may, let me take this opportunity to wish you a most Merry Christmas... and the sincere wishes of the Birtcher Corporation for a happy and prosperous New Year.

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Articles

Foundations For Growth

A Review of the First Forty Years in Terms of Education, Practice, and Research

Gertrude Beard, R.N., R.P.T.*

PRELUDE

As a prelude to a review of the activities and development of the American Physical Therapy Association, it seems essential to recall the work of the Medical Department of the United States Army during World War I. Two officers in the division of orthopedic surgery, Col. Joel E. Goldthwait Chief Surgeon in the Orthopedic Medical Corps of the American Expeditionary Forces and Col. E. G. Brackett in the Home Service realized the need to rehabilitate the wounded soldiers quickly, and to the greatest extent possible. They also recognized physical therapy as an important adjunct to medicine and surgery. Late in 1917, through their enthusiastic efforts, a department called the Women's Auxiliary Medical Aides was organized in the Surgeon General's Office. In April 1918, the service was transferred to the Division of Physical Reconstruction, and the title was changed to Reconstruction Aides. Dr. Frank B. Granger who was already using physical therapy at Boston City Hospital was placed in charge of all physical therapy in the Army, both at home and abroad, and Marguerite Sanderson, from Dr. Goldthwait's office in Boston, was appointed Chief Aide immediately under Lt. Col. F. B. Granger. In this capacity Dr. Granger was largely responsible for the recognition, by the Surgeon General, that physical therapy was an important branch of medicine. His untimely death occurred on October 28, 1928.

Dr. Granger and Miss Sanderson, as well as those in authority in the Surgeon General's Office, held high ideals for this branch of the service and desired to have in it only women of good character and those with professional standing. This created a problem, for very few women with acceptable training were available, and most of these were nurses with additional training in physical therapy, but the Army at this time also had a great need for nurses. There were very few schools in the country where adequate training in physical therapy could be obtained; therefore, a course was organized at Walter Reed General Hospital to meet this need.

In addition, a communication was sent to a number of colleges with organized departments of physical education and to schools of physical education, requesting them to assist in training Reconstruction Aides, since these students had some knowledge in the biological sciences. Fourteen such institutions established courses which met the requirements as outlined by the Office of the Surgeon General.

The largest of these schools was at Reed College at Eugene, Oregon, and was under the direction of Mary McMillan. Miss McMillan had been appointed as a Reconstruction Aide on February 23, 1918 and was promoted to Head Reconstruction Aide at Walter Reed General Hospital on March 3, 1918, but she was given a leave of absence to conduct the course at Reed College. On October 15, 1919, Miss McMillan returned to Washington to become Supervisor of Reconstruction Aides in Physiotherapy, Medical Department at Large, Office of the Surgeon General. Miss Sanderson had been sent to France as Chief Reconstruction Aide in the American Expeditionary Forces.

Nearly 800 Physiotherapy Aides were in service during the emergency, and almost 300 of them were overseas. By the close of World War I,

* President, American Physical Therapy Association, 1926—1928.

these aides had confirmed the conviction held by Dr. Goldthwait and Dr. Brackett and by their services had convinced other members of the medical profession in the Armed Forces that physical therapy was an important part of medical care.

The Association Is Organized. The records state that in September 1920, Lt. Col. Harold D. Corbusier wrote to Mary McMillan suggesting the formation of an organization to "advertise to all the physicians and surgeons of the country the importance of treatment by physical means and to elevate and standardize the work and place it on a more substantial basis." He also wished to obtain recognition for the Reconstruction Aides for the work they had so conscientiously performed. He had written to Dr. Granger and Miss Sanderson and suggested that Miss McMillan "act as a member of a committee to put this matter through." How well he knew Mollie McMillan! Early in 1920 the group at Walter Reed General Hospital had organized as The American Women's Therapeutic Association. In December of that year this group sent approximately 800 letters, regarding the formation of an organization, to reconstruction aides who had left the service and to those remaining in the Army. Blanks requesting nominations for officers were enclosed. From the 120 replies which were received a nominating committee prepared a ballot which was sent to the 200 paid members. On January 15, 1921, a meeting attended by 30 Reconstruction Aides and five physicians was held at Keen's Chop House, New York City. The election results revealed that Mary McMillan had been elected first president of a national organization, The American Women's Physical Therapeutic Association. An important step had been taken, the association was organized, and with the outstanding vision of these Founders, progress was inevitable. The objectives set forth in the constitution were: (1) to establish and maintain a professional and scientific standard for those engaged in the profession of physical therapeutics; (2) to increase efficiency among its members by encouraging them in advanced study; (3) to disseminate information by the distribution of medical literature and articles of professional interest; (4) to make available efficiently trained women to the medical profession; and (5) to sustain social fellowship and intercourse upon grounds of mutual interest.

History. The history of the first twenty-five years of the American Physical Therapy Association has been ably recorded and interestingly written by the late Ida May Hazenhyer, physical therapist at Jahn, and later, Burbank School for Crippled Children, Chicago. This was printed in the first four issues of Volume 26 of the *Physiotherapy Review.* Hez, as she was affectionately called by her friends, wrote with authority for she was one of the early Reconstruction Aides of the Army during World War I, later, Secretary of the American Physiotherapy Association (1926-1928), Associate Editor of the *Physiotherapy Review* (1932-1933), and Editor-in-Chief (1933-1936). We are greatly indebted to this early history for much of the information used in this paper.[1]

Miss Hazenhyer divided the period of twenty-five years into four parts: Pioneering Days, Formative Years, Coming of Age, Maturity. In considering "Foundations of Growth" we have divided the first forty years into periods of ten years and particularly emphasized advancement in terms of education, practice, and research.

First Decade

At the end of the war the Reconstruction Aides, in several localities, had informally organized groups, and in December 1921, a revision of the Constitution provided for these groups to form chapters of the national organization. The name of the Association created a problem since it excluded men who possessed the qualifications for membership. Consequently, in 1922 the name of the association was changed to The American Physiotherapy Association. At the end of 1925 there were five chapters: Chicago, Cleveland, Massachusetts, New York, and Pennsylvania. At the close of this first decade the chapters had increased to sixteen and the membership to 534.

The first Constitution defined Charter Members as "Reconstruction Aides in Physiotherapy who have served satisfactorily with the United States Army and Navy or with their Allies whose training and experience must total one year and who apply for membership within one year of the ratification of the Constitution. Active Members shall be graduates of recognized schools of physiotherapy or physical education who have had training and experience in massage and therapeutic exercise, with some knowledge of either electrotherapy or hydrotherapy and whose character and personality are suited to the work."

Education. Note that active members were required to be graduates of "recognized schools of physiotherapy." Presumably, although not stated, the recognition was to be made by the Association and at that time the members, having been Reconstruction Aides in the Army, had attended emergency schools established by the

Army. With the end of the emergency, many of these schools were discontinued. In order to maintain educational standards at this time, the Association realized the necessity of co-operating in the establishment of schools of physical therapy.

At this time the medical profession was beginning to recognize the importance of physical therapy and in 1925 the American Medical Association established the Council on Physical Therapy and was advocating the introduction of courses in physical therapy in medical schools. The American Physiotherapy Association was anxious to co-operate in this, and as a beginning, prepared a suggested curriculum as a minimum standard for schools of physical therapy. The length of the course was nine months, to consist of 1,200 clock hours, thirty-three hours per week. Entrance requirements were graduation from recognized schools of physical education, or graduation from recognized schools of nursing.

The suggested curriculum was sent to the schools whose graduates were approved for membership in the American Physiotherapy Association at that time, and copies were sent to the Council on Physical Therapy and the Council on Medical Education and Hospitals of the American Medical Association for their approval which was granted and the curriculum was published in the *Journal of the American Medical Association*.[2]

At the annual convention of the Association in 1929, a special committee was appointed to visit the schools which were offering or anticipating courses. This committee recommended that the medical director of an approved school should be an associate member of the Association, the technical director an active member of the Association, and the required clinical practice in medical centers should be supervised by members of the Association. They also recommended that a provision be made in the curriculum for a course in physical therapy during the fourth year in a university which granted the degree of Bachelor of Science in physical education.

The report of this committee was made at the ninth annual meeting of the Association in Detroit in 1930 and the July–August 1930 issue of the *Physiotherapy Review* published a list of eleven approved schools. Two of these schools were offering short courses listed as postgraduate. Since these courses were specialized in one phase of physical therapy the committee recommended that they should be called special courses in that phase and that the certificates granted the students should state that they had taken special courses and that they should not be given a certificate in physical therapy and should not qualify for membership in the American Physiotherapy Association.

Thus, at the end of the first decade we see the beginning of the fulfillment of a vision described by Emily Wellington and printed in the March 1924 issue of the *Physiotherapy Review*[3]: "Looking ahead—not too far in the distance—I see the medical department of all colleges installing the courses that will sanely instruct students in the value of physical methods—I mean not a condensed war course—but, a school for physical therapy awarding a diploma after three or four years' study, and requiring high standards for entrance and clinical experience in the best hospitals under the best medical supervision."

The Official Journal. The third purpose of the Association, as stated in the first constitution, was "To disseminate information by the distribution of medical literature and articles of professional interest." To fulfill this purpose, the copy for that first precious issue of the official journal, the *P. T. Review* (March 1921) was personally carried to the printer by Mollie McMillan. It was 5½ inches by 7½ inches in size, and consisted of sixteen pages. This continued to be a quarterly means of communication and source of education to the members until 1928, when it became bi-monthly. As evidence of growth, contrast this with the 7½ inches by 10½ inches, eighty-four page, March 1961 issue. In this recent issue, an editorial quotes from the *British Medical Journal* as follows: "The success and welfare of a medical association—depend first and foremost on the existence of a well-run professional journal." Our Founders had vision and an astonishing knowledge of the function of a profession. Even these very early issues of the *Review* contained original articles concerning a variety of subjects. Forty articles were written by the members of the Association during this first decade and other articles were contributed by members of the medical profession who were prescribing physical therapy in their practice. Abstracts of articles pertaining to physical therapy from the leading medical journals were contributed by Dr. John S. Coulter beginning in the December 1928 issue and continuing until his death in 1949. For a number of years he also contributed many book reviews of the current publications which pertained to physical therapy.

In the May–June 1924 issue the first bibliography on physical therapy literature, taken from a compilation by the Hospital Library and Service Bureau, was printed in the *Review* and this

has been continued as Index to Current Literature in each issue.

To stimulate writing among the members, the October–November 1929 issue of the *Review* announced a contest, open to any member, for a paper on any subject relating to physical therapy. The first prize, $50 and life membership in the Association, was won by Mabel Holton for a paper entitled "Treatment of Infected Wounds by Brine Baths." [4]

During the latter part of this first decade the *Review* was beginning to exchange periodicals with other professional organizations and it was listed in the American Medical Directory. The formal statement of ownership of the *Review*, as required by an Act of Congress, was first published in the March–April 1930 issue.

Association Activities. In 1930 the American Physiotherapy Association was incorporated in the State of Illinois and the official insignia was copyrighted.[5]

Annual meetings of the Association were held from the beginning. During the early years these were held at the same time and in the same location as the annual session of the American Medical Association. This made it possible to secure prominent speakers for the programs and gave the members of the Association an opportunity to attend the exhibits and some of the programs of the medical association.

In 1927 the constitution was revised with quite definite changes and more specific statements in the purposes of the Association. Namely: (1) to form a nation-wide organ which will establish and maintain a professional and scientific standard for those engaged in physical therapy, (2) to promote the science of physical therapy by co-operating in the establishment of standardized schools of physical therapy and encouraging scientific research in the profession, (3) to co-operate with, or under, the direction of the medical profession and to provide a central registry which will make available to the medical profession efficiently trained assistants in physical therapy, (4) to provide a bureau of information which will be available to members of the medical profession and the general public as well as to the members of the Association, (5) to bind the local chapters together.[6]

Practice. In the first constitution, the practice of physical therapy consisted of "massage and therapeutic exercise with some knowledge of electrotherapy or hydrotherapy." In the new curriculum the following technical subjects were required: massage, muscle training, corrective exercise, electrotherapy, light therapy, hydrotherapy, mechanotherapy, and thermotherapy.

The curriculum as revised in 1930 was more detailed in what constituted the practice of physical therapy; muscle training was added. The use of this term originated in the treatment of poliomyelitis in the 1915-1917 epidemic in Vermont. Treatment was directed by Dr. Robert Lovett, assisted by Wilhemine Wright and Janet B. Merrill, a charter member of the Association. This method of treatment for weakened muscles was continued by Miss Merrill later when she was in charge of the physical therapy service at The Harvard Infantile Paralysis Commission and technical director of the physical therapy course at Harvard Medical School from 1920-1946.

In this same period, Dr. Charles L. Lowman of Los Angeles together with Susan G. Roen, another charter member of the American Physiotherapy Association, developed the method of underwater gymnastics performed in a warm pool, for treatment of poliomyelitis and other orthopedic conditions. Another outstanding center advocating underwater exercise was at Warm Springs, Georgia, with Alice Lou Plastridge as Chief Physical Therapist. In smaller departments, underwater exercises were performed by the use of the Hubbard tank. As physical therapy became recognized, various manufacturers began to introduce numerous types of apparatus for the physical treatment of patients. Fortunately, for the hospitals and other physical therapy departments, the Council on Physical Therapy of the American Medical Association undertook the testing of these devices to determine whether they met the claims made for them.

In electrotherapy, the static machine was soon discarded and the high frequency currents were instituted to produce heat. First, the spark-gap oscillator, long-wave diathermy, then the short-wave and the inductance method were developed. The old "Wall Plate" was replaced by more modern types of generators for producing galvanic and faradic currents and, later, the sinusoidal, or wave type, for muscle stimulation. For ultraviolet radiation the hot quartz mercury vapor arc type of lamp was added to the carbon arc type.

Ethics. The 1927 revision of the Constitution added an important principle of standards, the specific statement of the ethical relationship of physical therapists to the medical profession. Namely, "to co-operate with, or under, the direction of the medical profession."

In the days of the Reconstruction Aides, the relationship with the medical profession had been established by military routine but the situation was different in civilian practice.

An editorial in an early issue of the *Review* stated: "We must in this" (standards of practice) "stick to our own field, which is the carrying out of prescriptions given by doctors and not diagnosing, prescribing, or in any way experimenting in the treatment of disease." This purpose of the Association has not changed in its forty years of growth. It has grown on this foundation, and the profession of physical therapy is respected by the medical profession and the public because of its high standards of ethical conduct.

SECOND DECADE

Although the early years of this decade were considered depression years, and there was some unemployment among physical therapists, there was a decrease in membership for only one year and a total increase of 182 in the first six years. There was no depression in the enthusiasm of the American Physiotherapy Association, or in its plans for the future.

Education. There were problems in education, however, and the Association set about to meet them. Five new schools were added to the approved list during 1931-1932, and four courses were discontinued, one because the curriculum was inadequate, one because of lack of students, and two because of the cost of the course. One shorter course was lengthened to nine months.[7]

At this time, the Education Committee recommended that a survey of all courses be conducted and a rearrangement of school curriculum be prepared and presented to the Council on Physical Therapy of the American Medical Association. In 1933 the Association appealed to the American Medical Association for assistance in the physical therapy school situation, and requested that it consider some plan for the rating of schools. The Board of Trustees of the American Medical Association designated the Council on Medical Education and Hospitals as the proper body to conduct this survey. In the March 30, 1935 issue of the *Journal of the American Medical Association*, a preliminary report was published. The Council inspected thirty of the forty-three existing schools and on completion of the survey stated that together with representatives of the American Physiotherapy Association, the Congress of Physical Therapy, and the Council on Physical Therapy, they would formulate proper educational requirements and essentials for schools of physical therapy and when these essentials were approved by the House of Delegates of the American Medical Association, would prepare a list of approved schools. As a result, The Essentials of an Acceptable School for Physical Therapy Technicians was passed by the House of Delegates of the American Medical Association on May 9, 1936. It was printed in the *Journal of the American Medical Association* August 29, 1936, and reprinted in the *Physiotherapy Review* in the issue of September–October 1936.[8] These essentials stated that: (1) affiliation with a college, university, or medical school was desirable but not an absolute requirement; (2) the school should have a competent teaching staff; (3) faculty appointments should be based on thorough education, training and successful teaching experience; (4) the staff should include not less than one qualified salaried instructor; (5) each institution where practical training was carried on should have not less than one qualified physical therapist; (6) adequate lecture rooms and class laboratories should be provided, and (7) a medical library should be easily accessible to the students. It was suggested that dissecting materials should be provided to enable each student to dissect, or have the benefit of demonstration dissection, of at least the lateral half, of a human cadaver. Clinical facilities should be available for practice training under competent supervision of a qualified physical therapist in a hospital or other institution acceptable to the Council on Medical Education and Hospitals of the American Medical Association.

Candidates for admission must meet one of the following requirements:

(1) Two years or sixty semester hours of college, including courses in physics and biology.

(2) Graduation from an accredited school of nursing.

(3) Graduation from an accredited school of physical education.

The minimum curriculum was stated in detail regarding the amount of theory and laboratory and of practice training. The hours stated for each subject were given in a multiple of fifteen, so that they could readily be changed into credit hours. The length of the course was specified as not less than nine months. Thirteen schools conforming to these standards were listed.

This recognition and co-operation from the American Medical Association was a great satisfaction to the American Physiotherapy Association. For fifteen years they had worked for high standards of education because one of the

very first purposes of forming the Association had been to provide well trained physical therapists to the medical profession and thereby give greater service to the patient.

The desire for more extensive education in physical therapy was evidenced in 1934 by several members of the Chicago Chapter, who expressed their interest in an opportunity to supplement their physical therapy training. These members had taken short courses in schools of physical therapy which were approved for membership at the time. To meet this demand evening courses in some of the fundamental physical therapy subjects were arranged during the next few years at Northwestern University School of Physical Therapy. These courses covered the same material as was given in the nine month course in physical therapy and were taught by the same instructors. The following courses were offered:

(1) *Human Anatomy*—lecture and demonstration on a prosected human cadaver. Two hour period weekly for eight weeks. The number of students was limited to eight for each class and two groups availed themselves of this opportunity.

(2) *Human Physiology*—one hour lecture period weekly for eight weeks. Twelve students enrolled.

(3) *Skeletal Muscle and Motor Activity in Health and Disease*—fifteen lecture hours with an enrollment of forty students.

(4) *Psychology of the Handicapped*—thirty lecture hours, registration ten.

(5) *Electrotherapy*—lecture and laboratory, three hours per week for twenty-two weeks.

Students who had previously completed short courses in approved schools of physical therapy and who completed all of these evening courses were given a certificate in physical therapy from Northwestern University School of Physical Therapy.

Minor changes were made in the essentials in November 1937. Schools of physical therapy might be conducted by accredited hospitals. In these the responsibility should be placed on the hospital administrator and at least two or more students should be enrolled in each class.[9]

Fourteen schools were on the approved list which was published in 1938, the courses varying in length from nine to twenty-two months and with a total capacity of 151 students. At the end of 1940 there were sixteen schools on the approved list and 135 students graduated that year. One school with entrance requirements of graduation from high school was offering a four year course leading to the Bachelor of Science degree.

The schools of physical therapy were urged to interest their graduating classes in membership in the Association. In several schools the entire class made application for Junior Membership at the time of graduation.

The importance of educational standards is expressed in an editorial in the January–February 1939 issue of the *Physiotherapy Review*, "Present high standards of education did not just happen. Today, they are taken for granted, but many of us remember the long struggle to raise those standards. Hospitals, physicians and departments of education have come to the realization that a technician who does not meet those educational requirements cannot serve them or their patients to the fullest extent. . . . It is only in retrospect that we can appreciate what the American Physiotherapy Association accomplished, yet there is just as much ahead to be done." [10]

Association Activities. In 1932 the president of the Association in her address to the Eleventh Annual Convention had recommended "a centrally located headquarters, with a full time paid secretary-treasurer." [11] During 1933 the secretary kept accurate account of the actual time she devoted to this office and reported that she spent an average of forty-four hours a month working for the Association. That was the time contributed by one office only; there were also the president, vice-president, treasurer and other committee members as well as the *Review* staff devoting many of their "off duty" hours to the work of the Association.

The membership became aware of the growth of the Association and that its functions could not be carried on without additional funds: at this time annual dues were increased from five to eight dollars. With the increase in dues it was now possible for the Association to hire a secretary to do much of the routine clerical office duties and also the work of the Appointment Bureau.

At the 1934 Convention the Constitution was revised to provide more efficiency in the work of the Executive Committee. The two members at large were replaced by six directors, each to serve a term of six years, their election arranged so that there would be some holdover of the committee instead of a complete change when new officers were elected. The secretary was now to be elected instead of appointed.[12]

Official Journal. The *Physiotherapy Review* during this decade was continuing to be a source of information for the membership. From the

first issue continuing through the first half of this decade all of the work connected with producing the bi-monthly magazine was done on a voluntary basis by the editor and her staff, all of whom were engaged in full time physical therapy positions. In 1935 the position of Assistant Business Manager of the *Review* was discontinued and with the raise in membership dues it was possible to employ a part time paid secretary. Two years later an office was established and full time secretarial assistance, under the direction of the editor, was employed. Some of the other activities of the Association, the Appointment Bureau and care of the Association's exhibits were carried on in this office, but none of the business of the Executive Committee.

The editor reported at the 1940 Convention that the subscriptions outside of the membership had increased to 350, a 400 per cent increase in a ten year period. A number of foreign subscriptions were included in this and the total circulation of the *Review* at the end of this decade was 1,575. The content of the magazine was reflecting the growth of the Association as shown by the increasing number of scientific articles written by members of the Association and there also was a growing interest in research. Several of the articles contributed were theses which had been written as a requirement for an advanced degree. There was also an increase in the variety of subjects of the papers which were contributed. The Index to the 1940 volume was listed under thirty-three different headings.[13]

Professional Relations. Many allied organizations were becoming aware of physical therapy and the Association was asked to send representatives to serve on their advisory boards.[14] A Relations Committee was appointed in 1939 for the purpose of establishing closer relations with allied organizations. At that time members of the Association were officially serving in an advisory capacity on the boards of the following organizations: The American Registry of Physical Therapy Technicians, The Committee on Services for Crippled Children, United States Department of Labor, *The Crippled Child* magazine and the Orthopedic Nursing Council to the National Health Nursing. In the following year representatives were appointed to two additional organizations, The American Association for Health, Physical Education and Recreation and The Canadian Physiotherapy Association.

The representative to the Committee on Services for Crippled Children performed an important service as she was influential in setting up the educational requirements for and the functions of the physical therapists who were to be employed in the state programs for crippled children. The educational requirements were to be graduation from a school of physical therapy approved by the American Medical Association and membership in the American Physiotherapy Association.

Practice. As the medical profession and the general public became aware of the value of physical therapy, the opportunities for varied types of employment for physical therapists increased. In 1940 an analysis of positions held showed the number of physical therapists employed in the following facilities:[15] hospitals, 440; schools, 154; physicians' offices, 94; private practice, 87; crippled children's organizations, 79; visiting nurse associations and public health, 66; clinics, 53; veterans administration, 22; industrial organizations, 9.

Because of the growth of the Association and the increased attendance at annual meetings during this decade it was no longer possible to make satisfactory arrangements for conventions in the same locality as the annual meetings of the American Medical Association. However, the relation of the Association with the meetings of the medical profession was continued. In 1932 the Association received an invitation to assist in a demonstration of the use of physical therapy in the treatment of arthritis under the direction of the Council on Physical Therapy, and in 1935 the Association was granted a booth in the scientific exhibit at the annual session of the American Medical Association. Invitations for the Association to exhibit at the annual meetings of the American Hospital Association were received also during this period.

The programs of the annual meetings of the Association were changing during this decade. More members were presenting original scientific papers and many of the programs consisted of panel discussions and symposiums in which members participated. At the 1940 Conference a Round Table on Muscle Studies was conducted.

An article entitled "A Broader View of Muscle Training" written by Janet B. Merrill was published in the November–December 1936 issue of the *Review*. In closing she quoted an old saying of Dr. Robert Lovett, "What are you trying to do? Is it worth doing? Are you doing it?" To this may be added, why are you doing it? To perform any technic of physical therapy without being able to give a reason is unscientific. That reason may be only on a theoretical basis, or it may be from thoughtful observation during past experience. This creates the need of research in

physical therapy. The growth of the profession and of the Association has occurred only because of the conscientious and intelligent application by its members, of the information made available to them and their desire for more information.

THIRD DECADE

At the beginning of this decade our Founders, The Reconstruction Aides, must have been forcefully reminded of their early days in physical therapy for our country was again at war.

Military status for female Physical Therapy Aides in the Army was granted by Congress in December 1942. Original appointments were made with the rank of Second Lieutenant. Graduates who held Bachelor of Arts degrees from approved physical therapy schools were eligible to be commissioned as Ensigns in the W.A.V.E.S. (Women Appointed for Voluntary Emergency Service). This action culminated the hopes held by Physical Therapy Aides for the past twenty years.[16]

Emma L. Vogel, a charter member of the Association, had served as a Reconstruction Aide during World War I, and assisted in organizing the First Medical Department Training course at Walter Reed General Hospital. She served as the technical supervisor of the course until 1942 when she was transferred to the Office of the Surgeon General. When military status was authorized, she was appointed the first Director of Army Physical Therapists with the rank of Major. During her service, the number of physical therapists appointed in the Army grew from 289 on March 31, 1943, to approximately 1,400 on V-J Day, February 21, 1946. She was awarded the Legion of Merit and retired in 1951 with the rank of Colonel.

Education. The subcommittee on Physical Therapy of the National Research Council conducted a survey of the demands for physical therapists for government hospitals, Army, Navy, and Veterans Administration and reported an immediate shortage of 500, and an estimated shortage of 1,200 in the next two years.[17] This committee then stated that a national emergency existed, and inquired of the fifteen approved schools of physical therapy if they could increase their number of students and conduct two emergency courses per year. A number of schools at this time arranged for courses of six months to meet this demand. Emergency courses were approved in eight schools.

The Office of Procurement and Assignment issued a call for 1,000 physical therapists. To help meet this need, an opportunity was given for members of the Women's Army Corps to receive training in physical therapy at government expense. The first groups to be selected were sent to Stanford University, University of Wisconsin, and the D. T. Watson School of Physiatrics, and the Army organized courses at four Army general hospitals in addition to the one at Walter Reed General Hospital.

When the war ended, all of the Army schools and two civilian schools were discontinued. Emergency courses were also discontinued. In 1945 786 students were graduated.[18] In 1946 the twenty-one approved schools had a capacity of 480 students. Seventeen of the twenty-five approved schools were offering degree programs in 1948[19] and at the close of this decade twenty schools were offering advanced educational programs, several at masters or doctoral level.

The increased incidence of poliomyelitis during this decade created a great demand for physical therapists and to meet this the National Foundation for Infantile Paralysis instituted a scholarship program to aid in providing sufficient personnel.[20]

In 1941 an educational setting was arranged for the twentieth annual meeting of the American Physical Therapy Association, which was of the conference type and was held on the Stanford University Campus. The program arrangement offered a "back to school" opportunity to the members. Classes were scheduled from 8:00 A.M. to 5:00 P.M. for four days. Discussion group programs on muscle testing, therapeutic gymnastics, and selection and evaluation of heat therapy equipment, and two lecture classes (one on psychology of the invalid and handicapped, and one on skeletal muscle and motor activity in health and disease) were held each day. Following the conference by sponsorship of the Association, Stanford University offered the members special graduate courses in the following subjects; advanced kinesiology; therapeutic gymnastics; study of a special problem in physical therapy; skeletal muscle and motor activity in health and disease and psychology of the invalid and handicapped, for which a total of six units of credit would be granted.[21]

The response to the conference type of annual meeting was so favorable that a similar program was arranged in 1942 and held at College Camp, Williams Bay, Wisconsin. A round table on physical therapy treatment in infantile paralysis, and one on war injuries and a lecture course on applied anatomy were held each day.

Post-Conference educational opportunities were given also in the area of the 1947 Conference.[22] A three week study program in which

three units of credit could be earned was offered at the University of Southern California. The courses were; the treatment of infantile paralysis, electrotherapy and neurology. And, a three week workshop in therapeutic exercise was offered at Stanford University, at which Dr. James B. Mennell of England was the special lecturer. Dr. Mennell had taken part in the Conference program, and was given Honorary Membership in the Association. It was a joy to many members of the Association who, for many years, had read with interest his contributions to physical therapy literature and had adopted some of his principles, to have this opportunity to know him personally.

In 1947 opportunities for advanced education developed in ten of the approved schools.[23] Four offered work at masters level and one at doctoral level. Four offered courses of six weeks to three months in special physical therapy technics, two of which were in poliomyelitis, and one in each of the following; cerebral palsy, fever therapy, psychomatic aspects of physical therapy, and one school offered a one year course for instructors of physical therapy.

In December 1944, Catherine Worthingham, former president of the Association joined the Medical Department of the National Foundation as Director of Professional Education.[24] In this capacity she has contributed immeasurably in developing undergraduate and graduate education in physical therapy.

At the close of this decade nineteen of the thirty-one accredited schools were offering degree programs and all training programs were affiliated with universities which maintained medical schools, or hospitals which maintained teaching programs. The Surgeon General announced the resumption of a twelve month physical therapy course in the Medical Department of the Army.[25] The institutions which offered advanced educational opportunities for qualified physical therapists had doubled. Some were short courses in specific subjects, others were graduate work at masters or doctoral levels. The National Foundation for Infantile Paralysis announced that scholarships would be available for these courses and they were continuing to offer long term teaching fellowships in preparation for teaching positions and short term fellowships for those now employed in approved schools.

The Executive Committee, at their semi-annual meeting in 1945, discussed the need for expanding the educational services of the Association, and made application to the National Foundation for a grant which would provide for an Educational Secretary in the National Office. This addition to the National Office Staff was the means of great advancement and growth in the field of physical therapy education.[26] Vocational guidance, and the preparation and distribution of informational materials aided in the recruitment programs and guidance and assistance in the organization of new physical therapy schools has been particularly valuable.

Student membership became an integral part of the Association in 1948[27], and in January 1948 there were 262 student members from nineteen schools. In one school the new students were student members within two weeks after their enrollment. In 1949 two schools reported 100 per cent of their graduating class, which had been student members had been accepted for active membership at graduation, and the schools had presented them with American Physical Therapy Association pins or sleeve emblems. It is hoped that there were others that were not reported, for it seems incredible that any individuals entering the profession would not avail themselves of the opportunity to affiliate with and contribute to the organization which had made the profession an honorable one and had made it possible for them to obtain an education of high scholastic standing.

As early as 1941, at least a short period of time was allowed on the conference program for the group particularly interested in physical therapy schools to meet together. This was continued at each annual meeting until 1946 when the School Section was definitely organized as a Section of the Association. The purposes of the School Section as stated in the Rules of Government were: to consider, discuss and recommend standards relative to admission, curriculum, clinical training, and administration of physical therapy schools approved by the Council on Medical Education and Hospitals of the American Medical Association, to receive for discussion any matters concerning the education of physical therapists and to make recommendations to the Executive Committee and the Committee on Education of the American Physical Therapy Association. Each year since 1948, a full day meeting of the School Section has been held at the time of the Annual Conference.

In 1950 the American Physical Therapy Association sponsored a three day meeting of technical directors of physical therapy schools. Twenty-six schools were represented and nine guests attended, including representatives of the Council on Medical Education of the American Medical Association, the National Society for Crippled Children, and the Committee on Education of the American Physical Therapy Associa-

tion. The problems for discussion at that time were, vocational guidance, need for new schools, difficulties in increasing student enrollment due to lack of adequate laboratory and practice space, insufficient teaching staff, and difficulties in integrating programs within an established university program. The current essentials of an acceptable physical therapy school were discussed. There had been no change since 1936, and a re-evaluation in terms of prerequisites, curriculum and other standards seemed to be indicated. Also, students must be prepared to work in newly developed specialties and a period of internship was discussed.

Association Activities. At the 1942 Conference sectional meetings were held in the evenings for those concerned with crippled children's schools and physical therapy schools, and a new feature was initiated which was known as The Allied Council. This was composed of representatives from agencies interested in the welfare of the ill and handicapped individual. Of the thirty-nine organizations represented many were of national scope; among them were the American Association for Health, Physical Education and Recreation; National Society for Crippled Children; United States Department of Labor; Joint Orthopedic Nursing Advisory Service; National League for Nursing Education; American Occupational Therapy Association; American Hospital Association; Council on Medical Education and Hospitals of The American Medical Association; American Public Health Association; National Foundation for Infantile Paralysis and American Congress of Physical Therapy. The total membership of the agencies partaking in this meeting was 1,400,000 and rehabilitation as we know it today was developed by the combined efforts of many of these.

Due to the war emergency and the problems created by changing officers of the Association, the current officers were requested to continue in office for another two years. At this time only two new directors were elected, to take the place of the two whose terms expired.[28]

Because of the war situation and a ruling of the Office of Defense Transportation the 1943 meeting of the Association was cancelled. The Executive Committee met to transact urgent business and the membership was kept informed of the affairs of the Association by special bulletins and letters sent to the Chapters and in addition four letters were sent to the entire membership.

By a grant from the National Foundation for Infantile Paralysis, in 1944 it was possible for the Association to establish a National Office in New York, and an Executive Director was appointed to carry on the affairs of the Association, as directed by the Executive Committee. At this time, the business office of the *Review* was transferred to this office, and later, also, the editorial office. All of the work of the Association with the exception of the two years immediately preceding this, when a secretary had been employed for the *Review* and one jointly for the Officers of the Association, had been done by full-time employed members in their "off duty hours."

Several members of the Association suffered harassing experiences during these war years. By shortwave an operator in Minnesota picked up information that Brunetta Kuehlthau who had served in various United States Army Hospitals was one of a group of American prisoners interned at Manila.[29] After nearly three years of internment by the Japanese, Lieutenant Kuehlthau returned home in time to attend graduation exercises at Walter Reed General Hospital, her former physical therapy school and was notified of her commission and promotion to First Lieutenant.

Lt. Metta Baxter of the 21st General Hospital was the first physical therapist to be cited "for exceptionally meritorious conduct in the performance of outstanding service from July 8 to September 8, 1943." The War Department awarded her the Legion of Merit.[30] In a personal letter to Major Vogel she wrote, "My motto has been; never take no for an answer and there is no such word as can't." Lieutenant Baxter had used outstanding ingenuity in constructing improvised equipment.

The Bronze Star Medal was awarded to 1st Lt. Helen M. Filbert "for meritorious achievement in Biak, the Netherlands East Indies from November 7, 1944 to March 26, 1945 in connection with military operations against the enemy."

Two other members of the Association were honored during this decade. On April 15, 1947 at the Belgian Embassy in Washington, D.C., the decoration of The Golden Palms of the Order of the Crown, was pinned on Alice Lou Plastridge by Baron Silvercruys, the Belgium Ambassador as a tribute in recognition of services rendered to the people of Belgium during an epidemic of poliomyelitis.

A citation in recognition of her contribution to the care of ill and handicapped people was given to Dr. Catherine Worthingham and the Honorary Degree of Doctor of Science from Boston University was conferred on March 14, 1949.

It would be impossible to write a history of this decade without reference to the return of Mary McMillan from her experience in China. Shortly before the 1944 conference, she had ar-

rived on the Gripsholm with the first group of prisoners of war to be repatriated. She was awarded an Honorary Life Membership at the conference and at the informal dinner she was introduced by the master of ceremonies. Miss McMillan replied graciously and related her experiences in China where she had established a physical therapy department at Peiping Union Medical College. As a Japanese prisoner of war Miss McMillan told of giving physical therapy to some of her fellow prisoners while in this camp. Her equipment? A bucket in which to heat water over a fire of sticks, and her hands. When Miss McMillan had finished, the scheduled speaker of the evening arose to say he would cancel his speech as he felt any words following this story would be an anticlimax.

We quote from the report of her story in the July–August 1944 issue of *The Physical Therapy Review*: "It would be impossible to write it as she told it. The courage, both physical and spiritual, which brought this gallant lady through her many and great hardships was a tremendous inspiration to all who heard her. As we heard Miss McMillan tell her story our hearts and eyes were full. To have gone through so much and be able to tell of it without bitterness, rather with humor and courage is the mark of a very 'Great Lady'."

Again in 1945 the annual meeting of the Association was cancelled in response to a request from the Office of Defense Transportation but business of the Association was transacted by a meeting of The House of Delegates.

Rehabilitation was the theme of the 1946 Conference held at the Blue Ridge Assembly, Blue Ridge, North Carolina. Morning sessions were entirely devoted to this as it was being carried out in Army, Veterans Administration and Public Health hospitals. One afternoon was devoted to infantile paralysis and two to cerebral palsy and one evening to the report of the Physical Therapy School Section.

The registration was over 450 and of this number 346 were members. A large group of physical therapists from the Armed Forces was present and thirty-seven students attended part of the sessions. Two members of The Chartered Society of Massage and Medical Gymnastics of England who were studying in the United States attended as representatives of that organization. The Canadian Association of Physiotherapy was represented by its president.

The Twenty Fifth Anniversary of The American Physiotherapy Association was celebrated at a dinner meeting and again the first president of the Association, Mary McMillan, attended and told of the Founders and Pioneers of the Association and the growth of the profession.[31] Her talk was entitled "Physical Therapy from the Embryo on Three Continents." A silver collection was made and presented to Miss McMillan for the restoration of the physical therapy services in China.

In her address the President of the Association mentioned some of the relations which the Association had established in other countries.[32] Reciprocity had been made with the Australian Physiotherapy Association, a member of the Association had been sent by The Rockefeller Foundation to organize physical therapy service in a hospital in Venezuela. Another member was sent, by the United Nations Relief and Rehabilitation Administration, to Greece to assist in establishing a physical therapy school in Athens under The Near East Foundation and another member by the National Foundation for Infantile Paralysis to assist in an epidemic of poliomyelitis in Belgium.

The problem created by the war situation was not the only one which confronted the Association during this decade. In 1944 the United States experienced one of the worst poliomyelitis epidemics in history. Over 14,500 cases were reported.

To provide care for these patients, the National Foundation for Infantile Paralysis appealed to all members of the Association who could be temporarily relieved from their positions to volunteer for service in the epidemic areas, thirty members responded and one school sent seven senior students to work under the supervision of the graduate physical therapists.

In 1945, the National Foundation for Infantile Paralysis, recognizing the shortage of physical therapists, appropriated the sum of $1,267,600 for the general development of the physical therapy program, including scholarships for the undergraduate program and fellowships to provide additional instructors in the schools of physical therapy.[33] In addition, a teaching unit was organized in each of four approved schools of physical therapy which would be prepared to go to a poliomyelitis epidemic area for a period of six weeks. Each unit consisted of a physician, a nurse, and two physical therapists.

The use of rest and splinting in the acute stage of poliomyelitis as advocated by Lovett was widely accepted in this country. The work of Sister Elizabeth Kenny in "the Bush of Australia" was practically unknown in America. Sister Kenny came to America in 1940 as an official visitor sponsored by the Australian government to present the result of her treatment of polio-

myelitis to a research institution in America. She was given opportunity to demonstrate her methods at the University of Minnesota Hospital and City Hospital in Minneapolis. This study was financed by the National Foundation for Infantile Paralysis.[34]

Sister Kenny's concepts of spasm, mental alienation and co-ordination were difficult for the medical profession to accept. She did not presume to discuss the pathology of the disease, but was firm in her conviction that the early and frequent application of warm moist packs would relieve the pain and spasm of the muscles and permit early mobilization and thereby prevent contractures. Sister Kenny willingly taught her method to physical therapists and nurses at Minnesota General and Minnesota University hospitals during the summer of 1941. At the scientific meeting of the National Foundation for Infantile Paralysis in December, after they had heard the reports of her work, The Committee on Research for the Prevention and Treatment of the After-effects of Infantile Paralysis made the statement[35] that, "during the early stage of infantile paralysis, the length of time during which pain, tenderness, and spasm are present, is greatly reduced and contractures caused by muscle shortening during this period are prevented by the Kenny method."

Physicians throughout the country became acquainted with the new method of treatment and requests came for more and more skilled nurses and physical therapists. Because of the demand, the National Foundation for Infantile Paralysis established centers to give instruction in these techniques in institutions in California, Illinois, Indiana, Georgia, Pennsylvania, and New York, which made personnel available for the third greatest epidemic in the country. A total of 900 persons received training at the University of Minnesota.

Rehabilitation. The theme of the 1946 Conference was rehabilitation. In an editorial in the January–February 1946 issue of the *Review*, Dr. John S. Coulter congratulated the Association on making the first efforts to improve educational standards for physical therapists, even before the medical profession showed any interest in the subject, and on its struggle to maintain these standards in spite of the indifference or opposition of the medical profession which existed at times. He added, "It should be remembered that rehabilitation is not a new art to be practiced by specialists in rehabilitation, but is a subject to which well trained physical therapists have contributed and which can be successful only if well trained physical therapists are used as a part of the program." During the latter part of this decade, large rehabilitation centers were being established in which the total rehabilitation of the patient was emphasized. Under the direction of a physician, physical therapists co-operated with other professional groups, occupational therapists, social service workers and psychologists. One of the first of these was a new Department of Rehabilitation and Physical Medicine at New York University College of Medicine financed by a grant from the Baruch Committee on Physical Medicine. Dr. Howard A. Rusk, wartime chief of the Army Air Force Convalescent Program was appointed the director of this department.

In small departments where such organization was not possible, physical therapists developed a greater awareness of the total rehabilitation of the patient and realized that adequate treatment must include the re-establishment of the individual to the point where he can carry out the functions of daily life. Increasing emphasis was placed on functional exercise and activities.

Practice. During this decade the scope of the techniques in physical therapy increased amazingly. We have considered the development which has occurred in therapeutic exercise, occasioned by the changes in treatment of poliomyelitis. Functional activities were emphasized and within the decade were added the progressive heavy-resistance low-repetition method exercises of DeLorme, Buerger's exercises for the treatment of peripheral vascular conditions, several systems of body mechanics exercises for posture and back conditions were developed, exercises for asthma and other chest conditions were instituted, and some modifications of the Gutherie-Smith sling suspension principles were used. Massage which formerly had been the so-called Swedish type, or the Hoffa system used by Lovett in the treatment of poliomyelitis, had been influenced by the teachings of Mennell. Hyperpyrexia induced by diathermy, hot water, radiant heat, and by resistance coils had its day in the treatment of certain infections but was replaced with the discovery of antibiotics. Various methods for the local application of heat were within the armamentarium of the physical therapist—infrared, radiant heat, and warm paraffin. The thermostatically controlled cabinets made the application of moist heat simple and effective. The development of the whirlpool bath provided another means of applying heat, as well as the stimulation from the water in motion.

In the last few years of this decade, beginning in the September–October issue, the *Review* published a series of articles contributed by various

authors designed to show the scope of physical therapy. These articles covered the following fields: State Crippled Children's Service, public health service, cerebral palsy, Army, Veterans Administration, industrial clinic, curative workshop, large general hospital, small general hospital, rehabilitation centers and physicians office. Needless to say, the practice of physical therapy in these various types of employment must differ considerably. It can be said truthfully that we have come a long way since, "therapeutic exercise, massage, and some knowledge of electrotherapy or hydrotherapy," described the practice of physical therapy.

Research. Beginning in 1948, a feature of the program of the Annual Conferences was the time allotted for the presentation of research papers. The articles published in the *Review* during the early part of this decade show an increased interest in research. Many of them were reports on work done in requirement for an advanced degree. As the new types of apparatus mentioned previously were developed, research studies on their clinical application were conducted and reported.

One of the services of the Educational Secretary in the National Office of the Association is to give counsel and guidance on topics for research in the interests of the advancement of physical therapy on a sound scientific basis.

The members of the Association were saddened by the death of two of their Honorary Members during this decade. Dr. John S. Coulter died on December 16, 1949. Dr. Coulter had served in the Army during World War I, and had been impressed by the work of the Reconstruction Aides. He addressed the American Physiotherapy Association Convention in 1924 and at that time urged the Association to establish standards of education for physical therapists and to aid in starting schools of physical therapy. He organized one of the very early schools in 1927 at Northwestern University Medical School and relentlessly fought for high standards, not only for physical therapists, but also for physicians of physical medicine. He served on the Council on Physical Medicine from its beginning and on the Advisory Committee of the American Physical Therapy Association for twenty years. He was a devoted friend of the Association and was greatly pleased when he learned shortly before his death that the term "physical therapist" had been approved.

Dr. Coulter organized the Department of Physical Therapy at Northwestern University in 1924, and was the first physician to become a Chairman of a department of physical therapy in a medical school. He was influential in organizing or served as consultant in physical therapy departments in twelve Chicago institutions and was Medical Director of five of these for many years.

On August 31, 1950, the death of Dr. Harold D. Corbusier occurred. He was an outstanding person in the history of the American Physical Therapy Association. It was he who, in September 1920, wrote the letter to Mary McMillan suggesting the formation of an organization as related earlier in this history, and he was present at that memorable meeting at Keen's Chop House on January 15, 1921. We quote from the announcement of his death in the *Review*: "Dr. Corbusier maintained an active interest in physical therapy throughout his lifetime, in spite of the many responsibilities he carried out in relation to his specialty of orthopedics, his connection with the Army and his international assignments. Those who attended our national conference in Boston in 1949 will recall the privilege of meeting him there. We will never have a more sincere friend."

This third decade in the life of the Association was a challenging one. It might be described as the emergency era. Many important events indicative of growth had occurred. The National Office was established and at the close of this decade, the Office Staff consisted of the Executive Director, an Assistant Executive Director, an Educational Consultant, and a Poliomyelitis Consultant, besides the non-professional secretarial staff necessary to conduct the affairs of the Association. Changes in the Constitution and By-laws were made to provide for more efficient administration of the organization, the term "physical therapist" had been officially recognized by the medical profession, the name of the organization was changed to The American Physical Therapy Association and the name of the official publication was changed to *The Physical Therapy Review*. Beginning in January 1949, the *Review* was issued monthly. The active membership increased to 4,104 and there were 471 student members. The Association now consisted of fifty-five chapters in forty-two states and in Puerto Rico, Hawaii and District of Columbia.

The demand for physical therapists created by the war situation and the high incidence of poliomyelitis created many problems but the standards of the profession and the purposes of the Association had not relaxed. The organization remained farsighted and enthusiastic, its basic soundness of policy continued and it had been successful in providing a sound foundation for growth. No doubt those who were carrying the great responsibilities felt as did Inga Lohne, the

second President of the Association, when she said in 1923, "I am sure the Association has passed through its most troublesome years."

FOURTH DECADE

This decade opened with the nation in another emergency. There had been an involuntary recall of physical therapists by the Women's Medical Specialist Corps, and there was an immediate need for 179 of them.

Education. The Army Medical Service announced that the twelve month physical therapy training course would now be offered semi-annually. Two civilian schools also announced the addition of a mid-year class. Recruitment became a major project, in which chapters were urged to participate. A guide for local recruitment programs was prepared in the National Office, and fifty prints were made of the recruitment film, financed by the National Foundation for Infantile Paralysis. Student members in some areas participated in these programs. A Recruitment Consultant was appointed in the National Office, and brochures, film strips, and other informational material were prepared at both high school and college levels. Schools were asked to increase their facilities so that larger classes could be admitted to the existing schools.

Another serious problem was the need for instructors which must be met if the recruitment program were to succeed. The approved schools had vacancies in the teaching staff which were difficult if not impossible to fill, and several new schools were in the process of formation. An appeal was made for physical therapists, who were qualified, to consider the teaching field. The National Foundation provided ten teaching fellowships and financed regional meetings of school directors. By 1954 there was an upward swing in enrollment. There was a total of 1,660 students in thirty-four schools; and in 1955 a total of 1,929 students were enrolled, eighty-one per cent of them in degree programs.

The need for a curriculum guide for schools of physical therapy had been recognized for several years. Early in this decade, the Executive Committee of the Association authorized the preparation of such a guide, which was financed by a grant from the National Foundation for Infantile Paralysis. A revision, the first since 1934, of the Essentials of an Acceptable School of Physical Therapy was prepared by the co-operation of special committees, the National Office staff, directors of the approved schools and members of the Council on Medical Education and Council on Physical Medicine. This was submitted to the House of Delegates of the American Medical Association and was approved by them in December 1955.[36]

Annually since 1955 educational opportunities have been made available to the members of the Association by a five day Institute offered conjointly by the American Hospital Association and the American Physical Therapy Association.

During this decade an increasing interest was developed for more formal advanced education and many opportunities for short term graduate courses were offered. Some of these were given following the annual conferences, by institutions in the immediate or adjacent area. Twenty-three institutions offered such courses, some in the form of workshops. The length of the courses varied from five days to seven months, the greatest number being of four weeks duration. Several of the courses were offered more than once each year. Approximately eighty courses were offered under twenty-two different titles. The greatest number were in rehabilitation, second in number, cerebral palsy and other neuromuscular diseases, next in number prosthetics and poliomyelitis, the remainder under seventeen different titles. The guide to graduate education published in the *Review* in 1960 shows that graduate programs are offered in thirty-two of the forty-two approved schools of physical therapy.

In 1954 the test research program done by the Testing and Advisement Center, at the request of the Association was completed.[37] It provided physical therapy school administrative personnel with an objective basis to aid in the selection of students, and in some measure it would enable them to predict the student's ability in both the didactic and clinical phases of the curriculum. As a by-product, it included a comprehensive job description of the work of a physical therapist.

That education is an important purpose of the American Physical Therapy Association is evidenced by the fact that several groups within the Association, or consisting of members of the Association, are primarily interested in physical therapy education and all are working toward the same end, namely, to provide professionally minded physical therapists to assist the medical profession in the care of the patient.

The School Section, which held its first meeting in 1940, by a revision of the Bylaws in 1956, became the Section on Education within the Association. The Department of Professional Education in the National Office is assisted by an Advisory Committee appointed by the Board of Directors of the Association. The Council of Physical Therapy School Directors is the professional organization of physical therapists who serve as educational directors of curricula in

physical therapy, but it is not an integral part of the Association. For the past six years, opportunity for study and discussion for those engaged in the teaching field has been provided by an annual Institute sponsored by the Association and the Office of Vocational Rehabilitation. The Graduate Study Committee is primarily interested in advanced education. In 1958 the Office of Vocational Rehabilitation announced that a research fellowship program was available for advanced training in the professional fields which contribute to the vocational rehabilitation of physically or mentally handicapped persons. In 1960 the Graduate Study Committee received applications for these graduate study traineeships, five of the fourteen recipients will be studying on the doctorate level.

Scholarships continued to be available from the National Foundation for Infantile Paralysis for the Short Term Courses in the care of poliomyelitis patients, long term fellowships for those who wished to prepare for teaching or supervisory positions in approved schools and short term fellowships for instructors employed in approved schools. In 1952 the three thousandth scholarship awarded by this organization was personally presented, at a brief ceremony at their national headquarters by Basil O'Connor its president to Joan K. Sullivan.[38] At that time approximately 2,000 of these scholarships had been awarded to physical therapists. As of 1956, funds authorized for this program approximated $4,000,000. An interesting report of this program obtained by a questionnaire mailed to the recipients was published in the *Review*; 1,800 replies were received. Ninety per cent of the total obtained degrees, of which 14 per cent were advanced degrees. Of the total, 1,170 were currently in active practice in the field of physical therapy.

The National Foundation's (formerly The National Foundation for Infantile Paralysis) new scholarship program which began in 1959 offers annual health scholarships to help provide four years of college or university education in career preparation for five of the key health professions: medicine, medical social work, nursing, physical therapy, and occupational therapy; a minimum of 505 scholarships of $500 to each recipient, to be offered annually and to be made on a geographic basis adjusted to population.

In 1960 the House of Delegates adopted a resolution regarding standards of education, recommending that the American Physical Therapy Association consider the attainment of a baccalaureate degree the minimum qualification of a physical therapist. They also resolved that the Association be asked to take a more active part in promoting research by forming a committee on the national level to implement active research among its members.

Research. In an address read at an Exploratory Session on Graduate Education, W. G. Hutchison stated that "research in physical therapy should have as its goal the classification of the effects of the procedures involved in the modalities of physical therapy and thus to remove from the realm of empiricism the procedures so commonly employed." [39]

"The Development of Physical Therapy—As a Profession Through Research and Publication" was the title of an address given to the New York and Massachusetts Chapters in 1959, by Catherine Worthingham.[40] She emphasized the need for research, but this alone, she states will not develop the profession unless the results of the study are made known and the scientific literature of the profession is increased by well written publications.

In 1952 the editorial committee of the School Section compiled a list of titles of theses and research papers which had been written since 1943 by physical therapists who were engaged in graduate studies. It consisted of thirty-one papers on clinical practice, forty-seven on basic sciences, forty-seven on problems related to techniques and practice, and eighteen on problems related to education.

A research survey was conducted in 1959 by Wilma-Nell Harmony and Marian Williams.[41] In their report, the authors state they are aware that their efforts did not obtain a complete record of the research efforts of the membership, but it does provide a picture of the variety of roles in many types of research activity and a small beginning has been made.

An increasing interest in research did develop during this fourth decade. Definite sections of Conference Programs were devoted to the presentation of research papers and many other reports of research studies appeared in the contents of the *Review*.

Further research to determine the value of and explore the possibilities in the use of heavy resistance exercises, which originated at Massachusetts General Hospital, was financed by a grant from the Pope Foundation.

The most extensive research project in which physical therapists participated was carried out in the study of the prevention of poliomyelitis which was financially aided by the National Foundation. This was started after four consecutive years of the worst polio epidemics in history. In 1952 the incidence of poliomyelitis in

the United States reached an all time high, 57,628 new cases were reported. Controlled studies in the effect of gamma globulin as a protective measure were carried out in three different areas; in Utah in 1951, in Texas and Iowa in 1952. Miriam Jacobs was granted a leave from the D. T. Watson School of Physiatrics for the pilot study in Utah, and 1952 Carmella Gannella and Georgianna Harmon joined Miss Jacobs as members of the follow-up team. In 1953 the U. S. Public Health Service, requested the Association to assist in locating physical therapists to engage in the field studies. An abridged muscle grading system with a working manual and muscle examination form were developed by Dr. Jessie Wright and her staff at the D. T. Watson School of Physiatrics. Thirty-eight physical therapists attended an orientation session, and these physical therapists participated in the studies carried on in thirty-five states and the District of Columbia in 1953.

Again in 1954 field trial studies on the effect of the Salk vaccine were carried on. Many of the physical therapists of the former program were again available, but more were needed to cover the areas and thirty-five additional physical therapists were oriented in the program and assisted in the study.

On April 12, 1955, newspapers, the radio, and television were carrying around the world the message of Dr. Thomas Francis Jr., at the University of Michigan, announcing that he had found in the 1954 study that the Salk vaccine was 80 to 90 per cent effective against paralytic poliomyelitis.

During the years of the high incidence of poliomyelitis, several centers were established throughout the country which provided especially for the care of patients with respiratory involvement.

Association Activities. For the first time in history, at the 1955 Conference, the American Physical Therapy Association awarded citations. In appreciation for outstanding services in the field of poliomyelitis, citations were awarded to Basil O'Connor, Dr. Jonas Salk, Miriam Jacobs, and Lucy Blair.

At the 1960 Annual Conference the American Physical Therapy Association bestowed Honorary Membership to Dr. Jessie Wright as an expression of the appreciation and respect in which she is held by the members of the Association. Dr. Wright, as a physical therapist, became an active member in 1923, and as a physician an Associate member in 1935. In her position at the D. T. Watson Home for Crippled Children and the School of Physiatrics, she has made a great contribution to physical therapy and generously encouraged and supported her staff to participate in professional projects and activities of the American Physical Therapy Association.

Awards were received by members of the Association serving in the Army during this decade. On March 2, 1953, Major Ethel M. Theilman was awarded the Legion of Merit for "exceptionally meritorious conduct in the performance of outstanding service in Japan and Korea. Captain Mary J. Torp was awarded the Bronze Star Medal for her work at Tokyo Army Hospital, and Major Elizabeth C. Jones was awarded the Bronze Star Medal for meritorious service at this hospital from September 1953 to July 1954 during which she supervised in an epidemic of poliomyelitis.

An editorial in the July 1957 issue of the *Review* expressed congratulations to Dr. Charles LeRoy Lowman, founder and first chief of staff of Orthopedic Hospital in Los Angeles, who on June 13, 1957, celebrated his fiftieth anniversary of medical practice. Dr. Lowman is Medical Director of the School of Physical Therapy of the University of Southern California, one of the first approved schools, and has contributed much to the growth of the profession. In 1936 a gold medal of honor bearing the insignia of the American Physical Therapy Association was presented to Dr. Lowman, "In recognition of his loyalty to, and championship of, the standards and ideals of the Association, and in deep appreciation of the time and knowledge he so generously gave towards the furtherance of the organization." The Association was honored by the presence of Dr. Lowman at the 1961 Conference.

In 1955 the opportunity was opened for physical therapists to serve as commissioned officers in the Regular Corps of the United States Public Health Service and a bill was passed in Congress to change the title of the Women's Medical Specialists Corps to the Army Medical Specialists Corps, thus making reserve commissions available for men as well as women.

The Association has urged the enactment of state legislation in all states to protect the public from the practice of physical therapy independent of a physician's prescription. There are now physical therapy practice acts in thirty-eight states. Until there is a law in each state, the practice of physical therapy independent of a physician's prescription can exist. A survey conducted a few years ago showed eighteen of thirty-one states with licensure or registration for physical therapists were prepared to use the licensing test provided by the Professional Examination Service, American Public Health Association. Increasing use of this allows for reciprocity between states.

Professional Relations. The American Physical Therapy Association can be proud of its international professional relations. Mildred Elson who had served the Association as Editor-in-chief of *The Physical Therapy Review* for nine years and was the first Executive Director, which position she held for twelve years, played a large part in the formation of The World Confederation for Physical Therapy. In 1956 Miss Elson received unanimous election to Honorary Membership in the American Physical Therapy Association and a citation for her outstanding leadership in the profession.[42] On October 26, 1959, Miss Elson received the annual award of the United States Committee of the International Society for the Rehabilitation of the Disabled for "outstanding achievement in the field of international rehabilitation for the physically handicapped."

Miss Elson worked for two years as chairman of the Planning Committee of the World Confederation and at the inaugural meeting on September 8, 1951, held in Copenhagen, was elected its first president. The First Congress of the World Confederation for Physical Therapy was held in London, and the American Physical Therapy Association was hostess for the Second Congress held in New York in 1956: 1,810 Physical Therapists attended that meeting and the total attendance was 2,468. Thirty-nine countries were represented, the broadest representation at any international meeting ever held in New York. The American Physical Therapy Association was officially represented at the Third Congress held in Paris in September 1959, by Lt. Col. Agnes P. Snyder, President, as a delegate, and Dorothy Voss and Mary Elizabeth Kolb as alternates. Two hundred ninety members of the Association attended this meeting representing 7 per cent of the total attendance. Several Association members took part in the program.

In a smaller way, the American Physical Therapy Association has had many international contacts. Members have served on Fulbright Scholarships in Rome, Milan and in Greece. Others have served as advisors, as consultants or in actual practice in Egypt, Saudi Arabia, and recently, two groups of six physical therapists recruited by the Association have been employed for assignments of six months by the Red Cross in Morocco.

Mildred Elson was program co-ordinator as a representative of the International Society for the Welfare of Cripples for a Conference on Rehabilitation in Guatemala City, and many members have been representatives, or attended international meetings of health organizations.

International Relations have been accomplished also by service within our own country. Edith Buchwold Lawton was given an award for "outstanding achievement in a field of international rehabilitation for the physically handicapped." As director of postgraduate education, at New York University, Bellevue Medical Center, Institute of Rehabilitation, Mrs. Lawton has been responsible for training 150 co-professionals from forty different countries.

The Association has been the recipient of continued generous aid and support, and the progress which has been made would not have been possible save for the financial support in grants for educational and other purposes from several organizations. Outstanding in this was the National Foundation, which has contributed approximately one million dollars since 1944. Other grants were received from the National Society for Crippled Children, the Rosenberg Foundation, the United Cerebral Palsy Association, the National Association of American Business Clubs, the Elks National Foundations, the Pope Foundation and the Office of Vocational Rehabilitation.

In 1957 The Physical Therapy Fund, Incorporated, was founded by the Association to provide funds to advance the art and science of physical therapy. This Fund, although it is closely related in spirit, purpose and membership to the Association, is a separate corporation which is tax-exempt and distinct from the American Physical Therapy Association. Its primary purpose is to provide a source of partial financial support for research investigations of significant worth to the development of physical therapy as a medical service and to its growth as a health profession.

Practice. In this decade, several new procedures in the field of physical therapy were developing. Rehabilitation was gaining increasing interest, but in an editorial in the *Review*, Dr. Howard A. Rusk emphasized the importance of dynamic rehabilitation sufficiently early to prevent permanent disability and regretted that rehabilitation was being impeded by the personnel shortage.[43] The 1951 Conference showed an increasing interest in the use of physical therapy in chest disabilities and in the treatment of the amputee. The use of cold applications was increasing and also, an interest in the clinical use of electromyography. At the 1954 Conference, ultrasound therapy was presented as a new modality in physical therapy which provided a challenge to careful investigation for its proper use.

There was an increasing interest in neurophysiology as a basis for understanding some of the newer physical measures and a growing

tendency to discard older rigid and arbitrary systems and specific systems, as new ones were developing. The general theme of the 1958 Conference was neurophysiology. Several sessions of the program were devoted to the presentation of three of the newer approaches to the treatment of motor dysfunction. These methods were discussed and demonstrated by Berta Bobath of London, Margaret Knott of the California Rehabilitation Center, and Margaret Rood of the University of Southern California.

The North Central Section of the Council of Physical Therapy School Directors conducted a study in 1958 to determine the current trends and practices that exist within the practice of physical therapy. This study was done in order to evaluate the curriculum of the schools in preparing the student to meet the requirements of his professional experience. The questionnaires were sent to 5,500 members of the Association, and replies were received from 3,518. The statistics given in the report on the frequency of procedures and technics used daily are in great detail and difficult to summarize for evaluation. Ninety-six specific types of treatment are listed. A rough summary of the replies indicated that some form of exercise far exceeded any other procedure. Heat in some form followed next in frequency and massage, although far below exercise and heat, was next in frequency as a procedure; however, it was considerably above any of the other procedures listed.

During this decade, the Association lost four of its Founders and an Honorary member by death. On February 2, 1951, Janet B. Merrill died at her home in Cambridge, Massachusetts. Miss Merrill was Head Reconstruction Aide in World War I. She was the first Secretary-Treasurer of the Association, the first physical therapist to work in a state program for crippled children and an able instructor in and director of a school of physical therapy at Harvard University, one of the first approved schools of physical therapy. The Harvard-Simmons Alumnae Association established a scholarship fund in her honor which was recently contributed to The Physical Therapy Fund, Inc., in her memory.

The death of Marguerite Sanderson Smith occurred in February 1954. We have referred earlier to the contribution which Miss Sanderson made during World War I, as a Reconstruction Aide, and her part in the founding of the American Physical Therapy Association. We quote from a letter to her from Newton D. Baker, Secretary of War, "The principles of professional and personal conduct for which you stood, have become the accepted principles in the reconstruction branch of the Medical Department, and your influence upon it will long be felt."

On October 24, 1959 the death of our beloved and revered Mary McMillan occurred. In her first message as the first President, she said there was no cause dearer to her heart than the Association, and from her continued interest even in her later years it is evident that feeling never changed. In that message she also said, "It is up to you and to me to see to it that our foundation is laid on sound principles that will endure." The February 1960 issue of the *Review* was dedicated to Miss McMillan.

The Association lost an Honorary Member and a good friend by the death of Dr. James B. Mennell, which occurred at his home in England on March 2, 1957. A quote from the preface of one of his several books is typical of his attitude toward his profession and his patients. He states, "If I have been able, through these pages, to bring some relief to some whose lives have been rendered miserable by pain, I, and those who have worked with me, will be content."

Very recently another Honorary Member, Dr. Joel E. Goldthwait, died in Boston on January 15, 1961, just forty years to the day on which he had supported the founding of the Association in 1921. We have noted earlier his part in the organization of the Reconstruction Aides in World War I. His name is well known in the practice of orthopedics and in medical literature, his book *Body Mechanics* has been a standard reference for physical therapists for a generation.

Although not chronologically within this decade, we make note of the Fortieth Anniversary of the Association which was observed at the 1961 Conference, held in Chicago July 2–7 with a total registration of 1,394. Six Charter Members were honored at a luncheon and a citation was given to the forty-two members of the Association who were among the original 274 Charter Members. These six Charter Members were greeted at the luncheon by the President, Agnes Snyder, assisted by five past presidents who were in attendance.

We have attempted to relate some of the foundations on which the growth and accomplishments of the American Physical Therapy Association have occurred within the period of forty years. This growth has been made possible by the wise leadership of its officers and the sincere efforts of the individual members to perform their job well. Within the last two decades, the planning and the direction of the different groups of National Officers have been efficiently carried out by those employed in the National Office, but the realization of their objectives

would not have been possible without the cooperation and efforts of those members who have contributed their time to the work of the Association and at the same time, held full time responsible positions.

As of February 1961, the Association consists of fifty-seven chapters, representing all fifty states and the District of Columbia and Puerto Rico. The membership nears 10,000. We believe this has been accomplished because the association has fulfilled the important task as stated by Mary McMillan in the June 1921 *Review*, "To set a standard for physiotherapy, and neither in act, word, or deed, to lessen that standard."

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Gertrude Beard, President of the American Physical Therapy Association from 1926 to 1928 was the first director of physical therapy at Northwestern University Medical School in Chicago, established in 1928. Miss Beard was director until 1952 having held this position for twenty-four years. From December 1928 until July 1950, Miss Beard held various posts with *The Physical Therapy Review* as General Manager and Business Manager, when the *Review* was published in Chicago, to Associate Editor. She has contributed many articles to the *Review*, the most recent being "A History of Massage Technic" (December 1952). Miss Beard was a Director of the Association from 1936 to 1942 and its representative on the Advisory Committee to the American Registry of Physical Therapy Technicians (ARPT) from 1942 to 1946. Because of her experience, Miss Beard was invited to review our first forty years.

Patterns for Progress*

Agnes P. Snyder, Lt. Col., US Army, Retired

Physical therapists are fortunate to have had so many people with vision and dedication to blaze our early paths. Yes, we do have a heritage of which we all can be justly proud and which should keep us inspired to equal.

We are also very fortunate to be a part of the dynamic field of medicine. We indeed should feel privileged to provide a service for the well-being of our fellow man. As providers of this service we are ever stimulated and challenged by not only the changing demands of and for the service but also the exciting changes taking place in the service itself. This should be true since we will always be guided by the social and economic changes taking place in the society for which we care.

It scarcely need be mentioned that in drawing up patterns for progress for the profession we are not only confronted with and must solve present day problems but also we, as did our founders, must plan for the future and anticipate to the best of our ability what will face us tomorrow and tomorrow and even in the next forty years. The next forty years will put us into the twenty-first century. Our instructors today are now preparing the men and women who will be our leaders in the profession in the year 2000.

Even more than in the past forty years, our future contribution to society will depend upon how well we anticipate the needs of the future and how well we plan to meet them. With the kind of service we provide we can never allow ourselves the luxury of professional contentment. Our horizons must be always distant.

Just as "no man is an island unto himself" so no profession can be self-contained. Not only does a profession modify, to an extent, but it is profoundly modified by the society in which it functions. Many of the issues that confront physical therapists now, and will in the future, are reflections of issues that are common to all such groups. Similarly, many of the changes and problems that seem unique to physical therapy have resulted from forces that have their origins outside physical therapy and that represent the way in which physical therapy has adapted to conditions created by these forces.

In successfully meeting our problems today and tomorrow, we must be alert to and aware of the influences that have helped to develop physical therapy as it now exists. We must also be alert to signs of impending influences and shifts in the current that will inevitably affect our profession's future course. It is only through such awareness on the part of our membership that physical therapy will be able to adapt itself to changing conditions in the manner that is best for society. It is not enough that our national leaders have this vision, it is their responsibility to bring this awareness to the great majority of the membership of the profession.

What are some of the sociological and economic trends in our country which we believe will have an impact on physical therapy and all professional organizations during the next twenty or thirty years?

One of the very first would be the growth of government concern in meeting the needs of all citizens. Note the establishment in the Executive Branch of the government, the Department of Health, Education, and Welfare; and one need only follow the increasing annual appropriations and actions by Congress to be impressed in the growing change and emphasis on health needs. Not only are the present activities being enlarged but each year brings expansion. Specifically, an example is the accelerated emphasis and interest by the government in the problems of aging.

The growing significance and influence of organized groups in this country, the widespread trend toward professionalism in society-at-large, and the general trend toward higher education and specialization will bring forces to bear upon us to which we will need to react.

Increasing productivity of all workers, rising standards of living, technological changes and advances, population shifts and greater mobility of people, all are bringing marked influences in our way of life and will continue to do so for the years to come.

We no longer think of health as merely the absence of disease, we regard it as a state of physical, mental, emotional and spiritual well-being in which the individual is able to function to the optimum. This changed concept of health, changes in disease patterns, advances in medical science and education as well as changing practice and shifts in settings in which health care is given are trends which certainly can not be ignored in our planning.

How can we but be vitally affected by the expansion of knowledge about, and interest in, the behavioral sciences. Added to this is the growing and expanding awareness of the importance of research and the development of research methods.

* President's address, read at the opening session of the 38th Annual Conference of the American Physical Therapy Association in Chicago, July 1961.

This by no means covers the gamut of trends that have made our profession into the kind of profession it is today, and presents potentialities for greatly influencing its future development and growth. Certainly then, as must each profession that provides a social service, we must anticipate and be guided by these trends of modern life.

Each of us with any amount of experience as a practicing physical therapist has known great changes, changes not only in our concept of, but also our practice of physical therapy. We have even accepted great changes in the education of physical therapists. Yes, we have done well in keeping pace in the past, now what of the future?

In a rapidly changing complex society of the future we cannot be leisurely, nor can we trust to good-will or good intentions or to our individual professional ability to meet the service demands of this jet age society. As a profession we must recognize the many real problems that face us today and certainly that will demand our attention in the future. We must develop sound plans or patterns that will assist us in meeting them as they arise. Many of the problems with which we are faced have no precise answer at the moment but each must be approached with fundamental truths. Recognizing with honesty and sincerity that we as individuals and as a profession can uniquely fulfill a social need, we must be unafraid and uninhibited in meeting the perplexities of the change taking place. There is a *best* solution.

One does not need to spend much time with recent statistics to be convinced that we can never supply physical therapists in numbers required to meet the gap between services demanded and services available. This problem has confronted us since the middle nineteen-thirtys critically confronted us during World War II, and continues as a major concern. Meeting the physical therapy needs of the society we serve, I consider to be the most important problem with which our profession must come to grips. The very maturity of our profession depends upon the adequate solution to filling this gap. In my opinion this problem has not been adequately dealt with by our profession to this date. This situation should not continue.

Let us take a look at some of the basic considerations in meeting immediate and future disparities of physical therapy services.

First of all our profession must fully define physical therapy's unique professional functions. Perhaps redefining would be a better word for I am sure physical therapy was most carefully defined and the lines drawn by our early leaders. Am I correct in saying that this has not been seriously done in the past two or three decades? This cannot be a quick or easy decision, nor can it be accomplished entirely by physical therapists. We must have co-operative guidance and assistance of physicians as well as that of other health groups. We have a great professional need for co-operatively defining and respecting the areas of activity and responsibility of our special functions. When defining our prescriptive medical responsibilities we must fully realize that physicians have the ultimate responsibility for patient care and that they, and they alone, are trained to assume this responsibility.

When considering our functions we are challenged to decide if physical therapy is an occupation which is broader than a profession. We must decide if it embraces activities that require less than professional knowledge and skill. This decision must be made on the knowledge and skill required, rather than on the fact that physical therapists enjoy certain activities, or that they do not have time, or are not interested. If the decision points out that physical therapy includes activities which do not require professional knowledge and skill, then we can assimilate into our service people who are not physical therapists. The use of these assistants or aides would thereby extend the human resources from which to draw our personnel.

This will be a difficult step for physical therapy to take for it will be adding more problems that would require most serious attention. The differentiation of the tasks that could be performed by several types of workers, the training of these workers and the organization of our services in such a way that each worker could assume his appropriate responsibilities. It may seem to many of us that in taking such a step physical therapists would be risking their professional status. However, when such a step is considered as putting the needs of society above all other considerations, physical therapy would be demonstrating its professional caliber.

When the clarifying and redefining of functions that are unique to physical therapy are accomplished, it will require wide acceptance on the part of all health personnel, most of all physical therapists themselves. Broad acceptance must be emphasized, for until all concerned realize that the physical therapist's first responsibility is to fill the role for which he and he alone is prepared, physical therapy will not be able to achieve its maximum potential contribution to the care of patients. The best care of patients must be our personal as well as our professional objective.

In addition to defining clearly our role in health services and assuming that role, we must be alert to and accept into our services the new trends in practice. There should be the shortest possible lag between the development of new changes and procedures and the actual incorporation of them into our services. The spastic child in Bexar County, Texas should have available to him the same high level physical rehabilitation procedures that are available in Los Angeles County, California. The same should hold true for the Latin American Laborer who loses his leg in an accident.

There is a great trend in medical care today toward preventive aspects. Perhaps there is a more important role for physical therapy in prevention of disease and disability or in prophylaxis. Pre- and postoperative and pre- and postnatal physical therapy which we have long practiced are preventive physical therapy in special situations. Now, it may be that we need to broaden the limited aspects.

Physical therapy services can be greatly extended by highly skilled and experienced physical therapists providing consultative and advisory services, in the patient's home, in a nursing home or even in a hospital. The physical therapist under prescription from the patient's physician should develop the desirable program, teach it to the patient's family (and here is meant the individuals who are responsible for his care be it in the home or hospital) and then return at various intervals to supervise and measure progress. In the past this has been done in many individual cases; now it must be extended to become the general rule rather than the exception.

A physical therapist has a great deal to offer the public health agency providing a home service program. Here the nurse and family follow through while the physical therapist comes to the patient at less frequent intervals. Some cities and counties and even states financed through public or voluntary funds, already have physical therapists who visit, establish and supervise physical rehabilitation programs in nursing homes. Here the physical therapist can greatly extend his services by acting in a consultative and advisory capacity with planned follow-up visits. One physical therapist may very well provide services for a number of different hospitals in this same capacity. He may give his services one day per week to each facility—advising, teaching, checking and supervising. In this way the physical therapy needs of several facilities can be met. It seems doubtful if our profession can ever again afford a skilled physical therapist who treats eight or ten patients, five days per week, certainly a highly skilled physical therapist cannot afford it himself.

Our second greatest concern for our future should be maintaining an undergraduate curriculum in physical therapy that will prepare young men and women to successfully provide the kind of service that best meets the needs of society. Not only must our graduates entering the profession today, be prepared to meet the present day service needs but they should be equipped mentally and emotionally to cope with the rapid changes and pressures we know await them in the pursuit of physical therapy.

It is interesting to note the evolutionary stages through which various kinds of professional and technical education have passed in this country. In some instances the first step has been apprenticeship training in which the student helped the lawyer or the physician or the master craftsman, as the case might be, with his work, meanwhile learning from him the knowledge he was able to impart. While this form of education had the advantage of a one-to-one student-teacher relationship, the educational resources from which the student could draw reposed largely with a single person. Another fairly early stage was the autonomous, single purpose school—the normal school which prepared only teachers, and the medical school which prepared only physicians, and so on. While such schools could afford the student instruction from a variety of experts in his chosen field, few could provide the wealth and variety of resources in related fields of the social sciences that are found in a university. Accordingly, as the importance of scientific and humanistic foundations for all fields of work became recognized, most of the schools moved into the university. By and large, the trend of professional and technical education in this country has been toward amalgamation with institutions of higher learning.

Physical therapy education has followed this movement. Today only a very few of our schools remain under the control of service institutions. A January 1961 report from the Department of Professional Education of our Association indicates some recent trends and I quote, "Since 1953 no new curriculum in physical therapy (there have been ten approved) has been developed except within a university setting providing faculty and facilities needed."

There are common considerations in the development of any undergraduate curriculum. The purpose of the curriculum should be educationally and socially acceptable and realistic. The preparation should help the student to become able to serve society. There should be a sound

combination of general education and occupational preparedness which aims at laying a foundation for growth in several directions. We must provide the student physical therapist with a good understanding of man—his human needs, his own motivation, his interpersonal relationships, his spiritual and social expression as well as his place in society. The student must have an opportunity to develop intellectual skills of analysis and interpretation and ability to use written and spoken language effectively as a means of communication. This must be in addition to the more specifically technical preparation for professional practice and as a basis for graduate education.

You would agree that obtaining satisfactory learning experiences in physical therapy education are derived from: (1) an appreciation of the normal physiological patterns and the deviations from these; (2) the physically disabling conditions which happen to people; (3) the problems of physical handicaps at all age levels, and including (4) all aspects of these—prevention, progression, correction, rehabilitation, and maintenance. Learning experiences should include practicing in situations where disability problems are dealt with—in homes, clinics, hospitals, and other community facilities. Acquiring the skills necessary to serve society involves learning and using the fundamental concepts of history, biology, political science, government and economics, psychology, sociology and statistics.

The practice of physical therapy is always accomplished by one human being dealing with another human being or group of human beings. The physical therapist should understand the complex relationships of physical therapist to patient, patient to physician, physician to physical therapist and many others in the various settings where physical therapy is carried on. Complete patient services can be given only if relationships are understood. This calls for the ability to work with and understand people of different cultural, religious, social and economic backgrounds and the effect of family relationships in patient care. To acquire foundational experience in *self-direction* so that the physical therapist and others may work effectively together, it is important to stress social anthropology, general sociology, the community and contemporary society, the framework of health services, interpersonal relationships, mental health, psychiatric principles, and professional ethics. The physical therapist must be able to recognize that patients' needs are complicated and that at various times different needs are evident—sometimes physical, sometimes emotional—or there may be a whole combination of needs evident at one time.

Physical disability programs in which all health workers participate must incorporate plans for patient care with physical therapy as an integral part. Physical therapists must understand patient care in its broadest terms and know the relationship of physical therapy to a total treatment plan.

In physical therapy education it is essential that emphasis be placed in the areas of anatomy, physiology and physics in order to provide fundamental understanding of the skills and scientific principles underlying physical therapy. Instructional methods that will assist students in their integration of all learning experiences are essential. The student needs to be a participant in his own education, and learning should be a co-operative enterprise of teacher and student. It is important for a student as far as possible to gain generalized concepts through his own deductions from already understood instances and to strengthen his understanding of these concepts by putting them to use in solving concrete problems. The learning may take place through a variety of methods—reading, demonstration, conference, observation, interview, lecture and others. It is of more value for the student of physical therapy to care for a certain number of patients throughout the entire cycle of disability than to have a large variety of isolated experiences. Students should be introduced to total physical therapy problems.

How best can we approach the solving of concrete problems? All of us, not only students, seem to be beset every day with problems which must be considered and solved. These problems cover a wide range in our daily life. It is only by the satisfactory exploration of these daily problems that growth and peace of mind are maintained. A problem usually arises because of confused ideas or limited perspective. Understanding the total situation is essential to its effective control. Seldom can a solution be reached until the problem has been defined in terms of specific subproblems or questions. In all phases of modern life—personal, social, vocational, political, economic, educational, and religious—there is an increasing interest in the utilization of the problem-solving approach in a way of helping all of us to gain insight about and ability in solving problems. Effective problem solving requires a sound philosophy of life, an acquaintance with helpful sources and a working knowledge of the steps and methods of problem solving. Our entire curriculum should be so

developed and executed that the problem solving technique becomes a 'way of life' with our graduating physical therapists.

When preparing the physical therapy student for the technical aspects of practice our curriculum must locate the presentation of these skills in order that they be given at the most economical and meaningful level of instruction. This would appear to be, it seems, at the treatment level, in the actual coming face-to-face with the treatment problem. Here the student must call upon his background in education and experience in helping to solve the treatment problem. We should never take our valuable classroom hours in teaching and perfecting skills. Perhaps we must expect the student to assume the responsibility of preparing himself in a number of these technical areas where we have in the past been spending many hours disciplining not really educating our students. A number of other professional curriculums have already eliminated from their courses such skills that can be fairly easily and very adequately mastered by the student independent of skilled instruction.

The ever increasing demands for patient services are placing upon all physical therapists additional responsibilities as well as many frustrations. Each year the graduate physical therapist has less, and less time or opportunity to gain wide clinical experience before he must accept these additional responsibilities. The usual young physical therapist as well as the employing facilities today are aware and concerned about this situation.

In the areas of general education we must not ask less of our students but more and more. We must not only recognize, but truly accept the necessity of the scientific and humanistic background and incorporate it into our practice. In order for us to maintain an undergraduate curriculum in physical therapy that will prepare our young people to successfully meet the present day and future physical therapy service needs we must in the very near future add a fifth year, known as an internship or clinical affiliation year, to our undergraduate curriculum. Here again this has already been adapted by a number of other health professions who have endeavored to more successfully meet the needs of society.

The educators in our profession must accept the total responsibility of meeting the requirements for the maintenance of such a professional curriculum. They must be guided by the past, by looking to practicing physical therapists for assistance, but education must find direction by anticipating the future. Our young people must be prepared to meet the unknown demands of a changing society in our particular area of function in the health profession, and this task becomes the lot of the educators.

These then are suggestions for our patterns for progress. These suggestions are in line with the fundamental principles followed by other health professions who as ourselves are facing up to their real social obligations. These obligations cannot be ignored by any profession for in a democratic society such as our own this is one of the most important characteristics of a profession.

How to Borrow a Print of *The Return*

A complete listing of the film libraries where the Association's latest film is on deposit may be found on page 99 of the February, 1959, issue of the *Physical Therapy Review*. If the library nearest you cannot supply you on the date desired, contact another library near you. If you cannot obtain a copy, an order may be sent directly to the Motion Picture Service Bureau, 1697 Broadway, Suite 1406, New York 19, New York. The service fee is $2.75 and includes postage and insurance one way. The borrower is requested to pay return costs. The Bureau bills, and receives payment from the borrower. In addition to the 38-minute version, there is a TV version running 28 minutes, available from the Bureau at the same fee. There is also a 58-second television spot with sound track, excerpted from *The Return*, available on loan for a service fee of $1.00. *The Return* was chosen by Howard Thompson of *The New York Times* as one of the 10 best nontheatrical films of 1958.

Case Reports

Rehabilitation for Fracture Dislocation of Sixth Cervical Vertebra

Eugene Michels, B.S.*

Editorial Note: This case report is presented as a sequel to Tippett, Ray: Postoperative treatment for fracture dislocation of sixth cervical vertebra, Phys. Ther. Rev., 41:643-644, (September) 1961. The following is a description of the patient's course in a rehabilitation center after his early postoperative care in a general hospital.

On September 26, 1960, the patient was admitted to the Magee Memorial Hospital For Convalescents, Rehabilitation Center, in Philadelphia. He had been discharged from the Robert Packer Hospital on April 12, 1960 and had been cared for at home by his mother and brother from that date until his admission to the Center. While at home, part of his day was spent in a wooden wheel chair with a high, reclining back. He was lifted into and out of the wheel chair for all transfers and was unable to propel the wheel chair. He was exercised daily by his brother and spent a good part of each day reading.

Examination on admission revealed a seventeen year old, male quadriplegic patient with good voluntary function in all neck muscles and in the scapular elevators, deltoids, biceps and radial wrist extensor muscles bilaterally. Scapular adductors and shoulder rotators, bilaterally, were fair in strength. All other voluntary motor function in the extremities and trunk was absent. Some limitation of joint range of motion was present in both shoulders, elbows and hips. The skin over the sacrum gave evidence of an old, healed decubitus except for a remaining small oozing area and the skin over the areas of both greater trochanters was red. The patient had been wearing an external urinary appliance but on admission the insertion of an in-dwelling catheter was necessary because of the presence of a scrotal fistula. The patient was able to do limited self-feeding by means of an adapted hand strap and was able to turn pages of a book with the back of his hand. This was the extent of his ability in activities of daily living.

The patient started to program on September 27. On the first day he arrived in the physical therapy department on a stretcher. By the second day he was on a Foster frame and remained on this, being turned every two hours, until October 12, at which time he was allowed to sit in a wheel chair for two hours daily.

The initial program in physical therapy consisted of passive range of motion exercises for both lower extremities, passive stretching to overcome the previously mentioned limitations of joint motion and manually resisted exercises to all functional muscle groups. Once the sitting position was permitted, knobs were placed on the handrims of the wheel chair, enabling him to propel his own chair. At this time, progressive resistance exercises were started for the functional muscle groups of the upper extremities and posterior shoulder girdle by means of sandbags and various pulley and weight units. Leather wrist cuffs were used to affix the patient's upper extremities to the apparatus used.

Mat activities were also started on October 12. Initially, the patient was only able to roll from a prone to a supine position with assistance required to roll the lower half of his body. Additional resisted exercises, employing sandbags, were started on the mat concurrently with rolling, moving and sitting balance activities.

By November 17 the patient had shown marked improvement in the strength of all functional muscle groups with no manifestation of any additional return of function. Range of motion in shoulders, elbows and hips had improved and was within normal limits. The patient's skill in mat activities had improved to the point where he was able to do a resisted push-up of the upper half of his body while prone, and to roll independently from a prone to a supine position.

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His sitting balance on the mat, with and without leaning on his hands, had improved; and he was able to roll from a supine to a prone position with assistance required to roll the lower half of his body. At this time he still needed assistance to get from the supine to a sitting position on the mat. Within another three weeks, the patient had gained skill in protective techniques when sitting on the mat; he could fall to either side or to the rear and catch himself on one or both hands as well as fall safely from the sitting position into a supine or prone position.

By January 27, 1961, the patient was able to utilize the strength he had obtained and the skills he had learned to transfer from wheel chair to bed, bed to wheel chair, wheel chair to car and car to wheel chair with a sliding board and some assistance from one person. By this time he had received his own wheel chair. This was a custom-universal model with detachable desk arms, pin locks, brakes and swing-away footrests with heel loops. Handrims with vertical lugs were placed on the wheels so that the patient could propel his own chair. A cut-out seat board and two-inch foam rubber cushion were added to protect the patient's sitting surfaces. He was able to lock and unlock the brakes and remove the detachable arms; however, he was not able to replace the wheel chair arms or manage the footrests.

In occupational therapy, the patient had learned by now to wash and dry himself, shave with an electric razor, scrub his teeth, brush his hair, feed himself, put on a T-shirt or buttonless sport shirt, use a telephone, write, type and operate business machines. These activities were, in most instances, accomplished with the aid of adapted equipment.

By the beginning of February the patient was able to get from a supine to a sitting position on the mat, with no equipment and no assistance. This, and all previously mentioned activities, was accomplished without the benefit of the classical "pushers", Triceps and Latissimus dorsi. In spite of the proficiency gained in this maneuver during his stay at the Center, the patient was never able to duplicate this feat in bed because of the comparable difference in firmness and width of the mat and the bed.

Because of previous bouts of urinary tract infection, an inability to void adequately without an in-dwelling catheter and a desire to avoid continued use of the catheter, the patient was advised to undergo urological surgery in the form of a diversionary procedure. He accepted the recommendation and on February 4, 1961, was transferred to the Hospital of the University of Pennsylvania. A cutaneous vesicotomy was done; i.e., the bladder was connected directly to the external abdominal wall. The patient returned to the Center one month later to resume his program. Following healing of the surgical wound, a Mason bag was fitted over the abdominal stoma with good results, permitting resumption of all preoperative activities. Some loss of strength and endurance had occurred in this period, but the patient's effort and motivation soon rectified this.

While the patient was at the Center, other areas aside from those previously described were explored. Vocational potential and interest were evaluated through the verbal portion of the Wechsler Adult Intelligence Scale and the Kuder Vocational Preference Record. His verbal intelligence quotient was within the average range and areas of highest interest were social service, outdoor and literary. It was suggested that further testing and counselling would be indicated at a later date. In addition, a visiting school teacher was obtained in December of 1960 so that the patient was able to pursue his high school courses during his stay.

Prior to the patient's discharge on May 24, 1961, his family was instructed in all aspects of home care. These included passive range of motion exercises for the lower extremities, mat activities, continued resisted exercises for functional muscle groups, assistance techniques for transfer activities, assistance techniques for self-care activities such as dressing and bathing and nursing care, especially as regarded bowel function and urinary appliances. Additional equipment for home care was ordered, including a tilt-table, a commode chair with swing-away arms for use over the toilet in the home and a Hoyer lift, primarily for use by the patient's mother in transferring the patient onto and off of the tilt-table and the commode chair. Since the patient's home was not entirely suitable for wheel chair living, plans for moving to a more suitable house were discussed with the family. Plans were also made for the patient to continue his high school education on a home-bound basis, after which further exploration will be necessary along vocational lines.

Since the patient's discharge in May, 1961, he has corresponded with various members of the staff. In his most recent letter, dated September 5, 1961, he stated that he had completed two more school subjects, that he continues to do his exercises daily and that he intends to be busy this fall "taking in the football games". Any further description of this patient's attitude toward his disability is unnecessary at this time.

Suggestions from the Field

The Use of the Snorkle Tube in Treatment of Second Degree Burns to the Head, Neck, and Face

Helen M. Arduser, B.A.* and Barbara E. Pause, M.Ed.†

The use of whirlpool for treatment of second degree burns to the head, face, and neck has been described in a previous article.[1] A simple, inexpensive devise, the snorkle tube, can allow a patient to immerse the head underwater for as long as fifteen to twenty minutes at a time without the fatigue experienced from prolonged breath holding and rising from the whirlpool for exchange of air.

At this installation the patient with second degree burns of the face and head areas usually begins treatment on the second to third day following injury. In the early stages many patients cannot open their eyes because of edema. Treatment consists of whirlpool bath to the affected areas twice daily with minimal debridement. Patients report immediate relief from pain and tightness with concurrent improved tissue healing.

The therapist who has attempted self experimentation with the snorkle tube can give careful instruction to prepare the patient for comfortable, safe use during treatment. The patient may practice mouth breathing with the tube before using it beneath the water. Some patients prefer to hold the nose to prevent swirling water from entering the nostrils. The patient is told to keep the eyes shut. Frequently the lips must be moistened before the mouthpiece can be fitted to the teeth. At times the use of the snorkle tube must be postponed for a day or two before the lips can be parted for an adequate bite on the rubber mouthpiece. The snorkle tube can be stabilized by attaching it to the body with masking tape. Patients who do not swim have used the tube without difficulty.

* Chief Physical Therapist, Madigan General Hospital, Tacoma, Washington.
† Staff Physical Therapist, Madigan General Hospital, Tacoma, Washington.

The snorkle tube has been the treatment of choice of all patients shown the technique.

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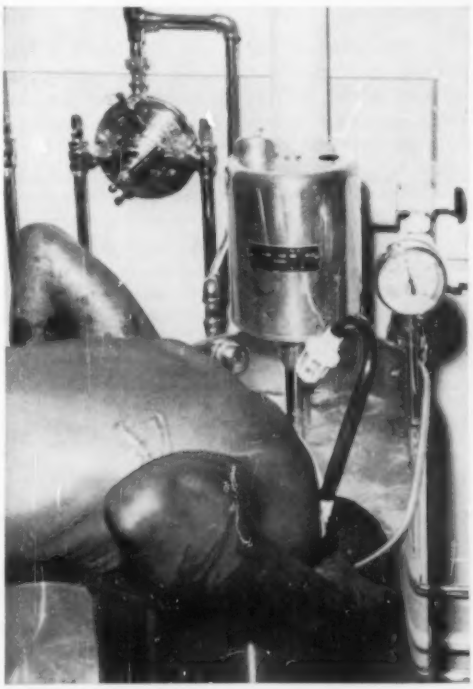

Figure. 1. Patient illustrates use of snorkle tube in arm whirlpool.

There are no diseases, there are only sick people.—Old French proverb

Functional Facial Splint in Five Minutes

Donald E. Shipley, B.S.*

Splinting or supporting paralyzed or weakened muscles of the trunk or extremities is of prime importance in affecting total recovery of muscle function. It is of equal importance in cases of facial paralysis. Many types of facial splints have been devised including plastic, adhesive tape, and paper clips wrapped in gauze.

Experience has shown, however, that such supportive devices have had to be replaced quite frequently because of discomfort to the patient, breakdown, unsanitary reasons, or because they were functionally inadequate.

The purpose of this paper is to suggest a suitable type of facial splint which is comfortable to wear, sanitary, economical, easy to make or replace, and one which will not break down as do tape and gauze splints.

PREPARATION

1. Straighten a paper clip and insert it into a length of thin rubber tubing (i.e., intravenous tubing) which is slightly longer then the clip.

2. Shape to patient's face making one bend to hook into the corner of the mouth and another bend (on the other end) to which a rubber band will be attached.

3. Encircle the ear with a rubber or elastic band attaching it to the second bend made in the splint. Correct tension can be adequately controlled by tightening or slackening the band.

Such a splint can easily be cleaned or changed merely by removing the rubber tubing, washing it, and inserting into it another paper clip. Therapists or physicians using this type of supportive facial splint on their patients will quickly discover its effectiveness and its ease and simplicity of application. In addition, as muscle activity increases, the splint acts as an assistive exercise device proving itself again more effective than plastic or other non-movable supports.

* Assistant Chief, U. S. Public Health Service Hospital, Carville, Louisiana.

FIGURE 1.

Proprioceptive Neuromuscular Facilitation Film

A 35 minute color film with sound is available to chapters and schools of physical therapy at a rental fee of $10.00. One copy of the film has been given to the Association by the California Rehabilitation Center. Requests from states east of the Mississippi should be directed to the American Physical Therapy Association, 1790 Broadway, New York 19, New York; rental is payable to the American Physical Therapy Association. Those west of the Mississippi should write to California Rehabilitation Center, 2600 Alameda, Vallejo, California; rental is payable to the California Rehabilitation Center. All requests should be submitted four weeks in advance of date of showing. Alternate dates are desirable since both copies may have prior bookings.

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Editorials

The *Review*

During the forty years of its life there have been many changes in our official publication. Some so gradual as to be hardly discernible, others more dramatic such as change in number of issues per year from quarterly to bi-monthly to monthly, change in cover style and color, and change in editorial style. There are always good reasons for change but none have ever been put into effect without debate or with unanimous acceptance. This last one will be no exception.

It was the considered judgment of the House of Delegates and the Board of Directors that the title *Journal of the American Physical Therapy Association* would more appropriately and accurately identify our official publication to others, such as librarians, researchers, publishers of indices and allied professional groups. There should be no disagreement with this judgment. Over the years original and notable contributions to the body of clinical and scientific knowledge in physical therapy and rehabilitation which should be shared and readily available have been published in the *Review*.

The title *Journal* also means, according to the dictionary, a record of occurrences, experiences, and observations. Thus the new title describes more accurately those important sections on Association news, editorials, reports and the like.

An official publication of any professional group plays an important role in the development of that profession. Its primary purpose is to develop an informed, enlightened and mature membership. One which is constantly seeking greater knowledge and skills, that they may better serve their patients; one which is aware of and accepts their role in developing and strengthening the profession through participation in organizational activities. In addition, the official publication is the image of the profession to others. Authoritative articles, well presented, readable, accurate and properly documented, reflect the stature of the profession, and attract non-member subscribers.

All of the editors and editorial board members of the *Review* have tried to meet these purposes and to publish the best journal possible—one which would meet current needs and anticipate the changing and growing needs of the profession. Therefore, changes in style, size, name, and greater scope in content with higher standards for acceptance of articles have been logical and inevitable.

The *Review*, as it has always been affectionately called, passes into history with this issue. It has served the Association honorably and well. In its forty volumes are recorded our beginnigs, our growth, our trials and tribulations, our mistakes and our successes, our goals attained and those unmet, *and* a comprehensive textbook of physical therapy.

The title *Physical Therapy Review*, it has been decreed, must be changed for more appropriate identification. This in a sense is a minor change. Just the name, not the character or purpose of the magazine, will change. But for many to whom the *Review* was synonymous with their profession, it is a major change. It will be remembered with nostalgia and respect for it has been, as its successor must be, the challenging voice of the Association, dedicated to the intellectual and organizational growth of the profession.

MILDRED O. ELSON
Editor-in-Chief, 1936-1944

The Therapist and the Lad

He was only a little lad,
Trying bravely not to cry.
As she lifted him from the wheel chair,
She gave a heart-felt sigh.
She laid him on the table,
His body was *so* small,
And the little crippled legs
Were of no use at all.
As she removed the braces,
The pitiful legs lay still.
With every touch he heard her say,
"You shall walk, I *know* you will."

And as she worked on the useless legs,
Sometimes he cried in pain,
But always her gentle kindness
Made him brave again.
She taught him how to exercise,
So his muscles would grow strong,
And he worked and tried and pushed and
pulled,
All the whole day long.
Sometimes he sat by the window,
And watched the boys at play.
And he said in his brave little heart,
"I will join them at games one day."

And every day they worked together,
The therapist and the lad.
And she always gave him encouragement,
When he was feeling bad.
And as she watched him strive,
To move those legs so small,
She wished to give him her *own* legs,
That he might walk straight and tall.
And month after month, and year after year,
They worked together still,
And always he heard her cheering words,
"You shall walk, I *know* you will."

And often she prayed for this little lad,
At the close of a busy day,
And asked that God would give him strength,
And courage along the way.
And always she prayed that one day,
He might walk again,
Free from the ugly braces,
Free from the torturing pain.
Somehow she felt that God would answer
Her constant, believing, prayer,
That one day she'd see this little lad,
Running without a care.

Each day the legs grew stronger,
And in his heart he knew,
That one day he would walk away,
And his strength just grew and grew.
And always she worked along with him,
And he improved from day to day.
And *then* there came the wonderful time,
When unaided he walked away.
She stood and watched him another day,
From a window, as he ran at play.
Then she turned about to another lad,
Crippled and broken and feeling bad.
And he heard her say, as he lay so still,
"You shall walk one day, I *know* you will."

JACULIN ROBINSON

"The Therapist and the Lad" was inspired by a physical therapist. One day I saw a tall, blonde girl standing in the lobby of the girls' residence where I live. She was dressed in a white uniform and was holding a brace in her hands. There was a weary expression on her face, as if she had given a great deal of her strength. She was a stranger to me but I got to thinking about what her profession might be. My imagination started working and the poem was born. Later I learned that the girl is a therapist and since she inspired the poem I gave her a copy. She told me she was touched and inspired by it. I hope others will be too—*Jaculin Robinson*

Association News

New Student Members

Loma Linda University

Virgil Baker
Glenn Howard Barlow
Joseph B. Beavers
Robert Charles Bevins
Elsie Bolton
Clinton Oral Bond
James Bradford
Theodore Burton Breakie
Leslie W. Breckenridge
Elizabeth Louise Buss
Mickey Frank Campbell
Joy Cartwright
Thomas J. Cates, Jr.
William D. Cox
Jimmy Dalton
Theodore C. Dawson
Earl Dale DeWitt
Francis Dobbert
Adrienne V. Dowling
Christina Fong
Marjorie Elaine Fowler
Morrine Jo Frank
Keith Raymond Gaden
Eunice Geli
Donna Jane Grey
Ruth V. Hablutzel
Bette L. Haenny
Dale Herman Hammersly
Alvin Eugene Haunch
Robert Bruce Henderson
Rebecca Hernandez
Monona Cathryne Hiett
Margaret May Jones
Noreen Kuniko Kawasaki
Eva Jane King
Stanley Keith Knowling
Dorothy Evelyn Kulisek
Barnell E. Lambert
Yvonne C. LeVos
Darlene R. Libby
Willie Earl McCloud
Everett L. Mohr
Donald Dewayne Morrill
Jean Winslow Mossi
Gary Lee Mundt
Lloyd Newman
Joanne Kay Parham
Elizabeth Promann
James P. Ragan
Wesley L. Ringering
Donald C. Schneider
Howard W. Sulzle
Martin Russell Tarangle
Virginia M. L. Thomas
Clifford Joseph Wedel
Harold Leon Williams

Marquette University

Joanne Ament
Sarah Emling
Mary Jungers
Karen Kautzer
Sister Mary Christopher Burke

Northwestern University

Aloha Bado
Susan Blount
Carolyn Caywood
Robert Engholm
Grace Gaag
Gale Holst
Charles Johnson
Milton Kurashige
Bernel Mahaffey
FloraAnn Manfredi
Carol Page
Jeffrey Parkin
Barbara Rossiter
Martin Sandstrom
Sandra Sebby
Ruth Sondak
W. Jean Stableton
Dale Swett
Myrna Turner
Robert Ulrich
Doris Youtsos

Russell Sage College

Susan Cain
Jean Carpenter
Sara Derrick
Greta Fischer
Anne Hannon
Sandra Holz
Susan Lapham
Marilyn Marsden
Elaine McCasland
Linda-Ann Nozell
Suzanne Robinson
Patricia Stevens
Betty Trainor
Sharon Wade
Gloria Lester

St. Louis University

Frances Ritz Sensakovic

University of Kansas

Judith Appleton
Jane Blair
Caryn Dietz
Sara Essex
Mary Gibson
F. Anne Gile
Sylvester Hartnett
Melinda Kirman
Duane Kliewer
Barbara Levendusky
Judith McBride
Ronald Michaels
Kathleen Rourke
Patricia Sorenson
Nancy Vermillion
Carlene Von Fange
Sally Winfrey
Sigrid Wolf
Patricia Lanning

University of Maryland

Pamela Barner
Harry Brafmann
Evelyn Johnston
Karen Kraemer
Howard Neels
Nancy Siegel
Clyde Souder
Donald Sullivan
Elliott Weiner
Carlyn Weston

University of Michigan

Pat Alcorn
Sandra Champnella
Mary M. Clark
Eileen Davies
Myrna Drake
Gwen Farmer
Kathryn Geiger
Adrienne Housour
Joy Huss
Marcia Innes
Shirley Johnsmiller
Ann McMullen
Louise Millstone
Lorraine Salomon
Margaret Schwartz
Mary Thompson

University of Oklahoma

Barbara Jo Hancock
Patsy L. McKelvy
Carole Ann Milton
Kay W. Roberts
Frances Anne Schuler
C. Diane Walstad

University of Pennsylvania

Nora Beneke
Beryl Bogin
Claire Brandell
Barbara Breen
Geraldine DeFlora
George DeHaven
John Dyer
Nancy Grove
Gail Hanson
Lawrence Hetzel
Sally Hoover
Nancy Jaynes
Thomas Lieberman
Sonya MacFarland
Elizabeth Naples
Carolyn Peck
Eugene Shales
Virginia Wilson

University of Wisconsin

Paul John Sinclair

Charlotte James Eastman Patterson's death in September 1961 has been reported by the New Jersey Chapter in which she held active membership. She received her physical therapy preparation at the Harvard Medical School, Courses for Graduates. For more than ten years she was responsible for organizing and developing crippled childrens' schools in three areas of Ohio. In recent years she was associated with the Orthopedic Hospital in Trenton. Mrs. Patterson will be remembered for her enthusiastic participation in programs for poliomyelitis patients as well as projects of the New Jersey Chapter.

Elizabeth Hennessey Fox of Seattle, Washington, died on September 28, 1961. She became an Association member upon completing her physical therapy preparation at the Bouve-Boston School in 1937. Following an experience at the Chelsea Marine Hospital, she moved to Washington and became associated with the Seattle Orthopedic and Fracture Clinic. Recently she was on the staff of the Firland Sanitorium. At the time of her death she was an active member of the Washington Chapter.

Physical Therapy Fund

Three grant awards were announced by the Board of Directors of the Physical Therapy Fund, Inc., at its meeting on September 29, 1961.

A research project for the investigation of various types of stimulation to the body and the influence on voluntary movement is being conducted at the Albert Einstein Medical Center in Philadelphia. A grant of $2,500 from the Physical Therapy Fund is assisting in one phase of the project in which Helen Hislop, Ph.D., is the chief investigator.

A study of the effectiveness of certain tests in predicting persistence of physical therapy students has been initiated at Marquette University in Milwaukee. A grant of $2,250 from the Fund will assist in completing the study which is being conducted by Leila H. Green.

The first grant award to assist a graduate student in partial fulfillment of requirements for a Master's degree was made. The recipient is Duncan Kennedy of Stanford University who is involved in an objective analysis and recording of gait.

The Physical Therapy Fund, Inc., a tax exempt institution, was established in 1957. Since its founding six grant awards have been made to assist in projects and studies. Three have been concerned with studies involving educational programs and two have been projects which may affect patient care programs in the future.

World Confederation for Physical Therapy

The August 1960 Membership Newsletter of the Association carried an appeal for voluntary contributions to the program of the World Confederation for Physical Therapy, pending the time when the annual subscription for organizational dues to the WCPT is increased. Contributions from chapters and individual members of the Association have been received during the intervening months.

The accumulated amount was sent to the new headquarters of the WCPT in September and the following message has been received:

London, England
October 2, 1961

Will you please convey to the members of the American Physical Therapy Association the gratitude of the World Confederation for Physical Therapy for the very generous response to the call for an increased annual subscription to the WCPT. To have collected $1,500 from voluntary contributions from your members is a great achievement, and the WCPT is most appreciative.

M. J. NEILSON
Secretary-General
WCPT

Share Your Journals

The United States Committee of The World Medical Association is sponsoring a project to send used medical journals to physicians in Asia. Specialty journals are needed, particularly this one.

If you wish to participate in this doctor-to-doctor program, please write to The World Medical Association, United States Committee, 10 Columbus Circle, New York 19, N.Y., listing the journal(s) you wish to contribute.

Physical therapists are invited to participate, too.

Education

APTA — OVR INSTITUTE

Once again the American Physical Therapy Association is pleased to announce plans for an Educational Institute. This will be the eighth of these annual meetings for which funds have been provided by a grant from the Office of Vocational Rehabilitation with matching funds from the APTA. The APTA—OVR Institute for 1962 will be held at the Oklahoma Center for Continuing Education April 1-6. The participants this year will be clinical instructors and classroom instructors from each of the approved programs in Physical Therapy. Plans are being made for ninety participants.

The Institute Committee met in Dallas, Texas on October 6 and 7 to formulate the preliminary plans for the program. The theme will center around "The Learning Process and Methods of Instruction". Meeting with the committee, composed of Thelma Pedersen, University of Oklahoma; Nancy Ward, Wadsworth VA Hospital, West Los Angeles and Doris Porter, Baylor University Medical Center, were Sarah Rogers and Anne Pascasio, Educational Consultants from the National Office Staff. Tentative objectives for the program are:

1. To promote a better understanding of the learning process.

2. To promote an understanding of students for purposes of admission, counseling, teaching and evaluation.

3. To discuss the needs for and means of counseling students; and to describe guides by which counseling skills may be further developed.

4. To explore methods of instruction and develop knowledges and skills for more effective teaching.

5. To develop guides for evaluation of teaching and learning.

6. To continue to develop a handbook for physical therapy educators.

7. To develop preliminary plans for continuing educational programs for physical therapy personnel (including the 1963 and 1964 institutes).

The faculty for the forthcoming institute will include specialists from the fields of education and counseling.

Northwestern University Confers Diplomas

Graduation exercises of the fortieth class in the Course in Physical Therapy at Northwestern University Medical School were held at 5:00 P.M. on September 29, 1961 in the auditorium of the Veterans Administration Research Hospital in Chicago. Dr Arthur Rodriquez, an associate member of the American Physical Therapy Association and Associate Professor of Physical Medicine and Rehabilitation, addressed the graduates. Miss Mary Elizabeth Kolb, President of the American Physical Therapy Association also spoke and pinned the American Physical Therapy Association insignia on each graduate immediately following the awarding of diplomas by Dr. Cyril H. Hauser, Medical Director of the Course in Physical Therapy.

After the exercises, the Northwestern Univerity Physical Therapy Alumni Association held an informal reception for the new alumni, guests and faculty.

The address of the School of Physical and Occupational Therapy in Puerto Rico is now Commercial Center, Second Street, Villa Nevarez, Rio Piedras.

Films of Interest

The Use of Pools for Trunk Excercises—30 min., color, sd., 16mm. Physical Therapy Department, Orthopaedic Hospital, 2400 South Flower Street, Los Angeles 7, California. Demonstrates various trunk exercises possible in a pool using a treatment plinth or the pool side rail.

Lifting from Wheel Chair—15 min., color, sd., 16mm. Physical Therapy Department, Orthopaedic Hospital, 2400 South Flower Street, Los Angeles 7, California. Made in co-operation with the Los Angeles Board of Education, Department of Transportation. Demonstrates the principles of lifting with special emphasis given to lifting wheel chair patients in and out of the school bus.

Schools Offering Courses in Physical Therapy

APPROVED BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS, AMERICAN MEDICAL ASSOCIATION IN COLLABORATION WITH THE AMERICAN PHYSICAL THERAPY ASSOCIATION

NOTE: Schools offering the four-year program leading to a baccalaureate degree accept high school graduates and transfer students. Schools offering the program of 12 to 16 months leading to a certificate accept students who have completed all or most of their undergraduate work, provided they meet certain course requirements. Students should arrange their college work so that on graduation they will hold baccalaureate degrees regardless of the plan of study, and should investigate course requirements early. For specific information regarding each school's requirements, curriculum, tuition, and other fees, write to the physical therapy director, indicated below, *not* the American Physical Therapy Association. Key to symbols: (*) Degree Course (†) Certificate Course (‡) Baccalaureate degree available from an affiliating college or university (§) Accepts women students only.

CALIFORNIA

Mary J. Dodge
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Childrens Hospital Society
4614 Sunset Boulevard, Los Angeles 27

Ronald A. Hershey
*†School of Physical Therapy
College of Medical Evangelists, Loma Linda

Lucille Daniels
*†Division of Physical Therapy
School of Medicine
Stanford University, Stanford (Palo Alto)

Margery L. Wagner
*†Curriculum in Physical Therapy
University of California
The Medical Center, San Francisco 22

Margaret S. Rood
*†Department of Physical Therapy
University of Southern California, Los Angeles 7

COLORADO

Dorothy Hoag
*†Curriculum in Physical Therapy
University of Colorado Medical School, Denver 20

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Elizabeth C. Wood
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Department of the Army, Washington 25, D.C.
Att.: Personnel Division

Changes in School List

The name of the College of Medical Evangelists has been changed to Loma Linda University, Loma Linda, California.

The Course in Physical Therapy, Bunts Educational Institute, Cleveland, Ohio, has been discontinued.

"Guide to Graduate Education" last appeared in the October 1961 *Review*, page 738.

SHORT TERM COURSES FOR GRADUATE PHYSICAL THERAPISTS

Title of Course	*Sponsor of Course*	*For Details Contact*	*Dates of Course*
Cerebral Palsy	The North Carolina Cerebral Palsy Hospital Durham, North Carolina	Lenox D. Baker, M.D. Medical Director No. Carolina C. P. Hosp. Durham, North Carolina	Courses arranged according to individual need—duration 3 months
Cerebral Palsy Technics of Treatment	Children's Rehabilitation Institute for Cerebral Palsy Reisterstown, Maryland	William P. Germain Executive Director Children's Rehab. Inst. Reisterstown, Maryland	Oct. 2—Dec. 15, 1961 Jan. 8, 1962—March 23, 1962 April 9, 1962—June 22, 1962 July 9, 1962—Sept. 21, 1962 Oct. 8, 1962—Dec. 21, 1962
Theory and Technic of Treatment and Care of Neuromuscular and Musculoskeletal Disorders	Georgia Warm Springs Foundation Warm Springs, Georgia	Robert L. Bennett, M.D. Director Ga. Warm Springs Found. Warm Springs, Georgia	March 26 to June 15, 1962 June 18, 1962 to Sept. 7, 1962 Sept. 24 to Dec. 14, 1962 Dec. 31, 1962 to March 22, 1963
Technics of Neuromuscular Facilitation	California Rehabilitation Center Vallejo, California	Margaret Knott, Chief P.T. Calif. Rehab. Center Vallejo, Calif.	January 2 April 1 July 1 October 1
Graduate Physical Therapy Program	Rancho Los Amigos Hospital Downey, California	Chief Physical Therapist Rancho Los Amigos Hospital 7601 E. Imperial Highway Downey, California	2nd Monday in March to 1st Monday in Sept. 2nd Monday in Sept. to 1st Monday in March
Advanced Physical Rehabilitation Methods for Physical/Occupational Therapists	New York University Medical Center—Institute of Physical Medicine and Rehabilitation (in cooperation with New York University School of Education)	Edith Buchwald Lawton, Director, Postgraduate Education for Paramedical Personnel, New York University Medical Center, Institute of Physical Medicine and Rehabilitation, 400 East 34 Street New York 16, N. Y.	Nov. 13—Dec. 8, 1961 Feb. 5—Mar. 2, 1962 April 30—May 25, 1962
Lower-Extremity Prosthetics (#622)	Northwestern University Medical School	Jack D. Armold, Ph.D. Director of Prosthetic Education Northwestern University Medical School 401 E. Ohio Street Chicago, Illinois	Nov. 6-10, 1961 April 2-6, 1962 April 23-27, 1962
	Post-Graduate Medical School & College of Engineering New York University; & U. S. Office of Vocational Rehabilitation	Prosthetics and Orthotics New York University Post-Graduate Medical School 550 First Avenue New York 16, New York	742A Oct. 9-20, 1961 742B Dec. 4-15, 1961 742C Feb. 5-16, 1962 742D Apr. 23-May 4, 1962
Upper-Extremity Prosthetics (#662)	Northwestern University Medical School	Jack D. Armold, Ph.D. Director of Prosthetic Education Northwestern University Medical School 401 E. Ohio Street Chicago, Illinois	Feb. 19-23, 1962 Mar. 5-9 1962
	Post-Graduate Medical School & College of Engineering New York University; & U. S. Office of Vocational Rehabilitation	Prosthetics and Orthotics New York University Post-Graduate Medical School 550 First Avenue New York 16, New York	745A Jan. 15-26, 1962 745B May 14-25, 1962

Abstracts

Treatment of Hand Infections

C. Martin Rhode (Veterans Administration Hospital, Medical College of Georgia, Augusta, Georgia), AMER. SURG., 27:85-115, February 1961

The author reports the importance of "bold and accurate action" in the management of hand infections. There appears to be an increasing number of patients observed with serious hand infections caused by coagulase positive staphylococcus. Many of these cases are associated with minimal or no trauma. The importance of proper management is emphasized by a thorough discussion of specific anatomical features of the involved area and also the necrotizing effect of the staphylococcus.

Hand functions may be severely impaired in infections of the hand because of the associated pain, stiffness, swelling, joint and ligament contraction and tendon immobility. When immobilized the hand must be maintained in a position of function.

It is important to convert an open infected wound to a clean, closed wound as quickly as possible to avoid chronic drainage, prolonged edema, inflammation and immobilization, thus preventing stiffness, fibrosis and contracture. Prompt judicious radical debridement was carried out in the reported cases. "Vigorous, closely supervised, rehabilitative exercises, and treatment must be initiated as quickly as possible. The surgeon must strive to be equally experienced in this vital phase of treatment and supervise it until the greatest range of motion is regained." Unless the patient regains a hand with useful function, the healing of infected wounds is a small accomplishment. The article is enhanced by the generous use of good illustrations.

Experiences with Hypnosis on a Surgical Service

K. B. Bonilla, W. F. Quigley, and W. F. Bowers (Tripler Army Hospital, Hawaii), MILIT. MED., 126:364-370, May 1961

The value of hypnosis as a therapeutic agent is well established with ample confirmatory experience. Because of the possibility of doing harm by the ill-advised use of hypnosis, rigid restrictions were laid down. This method is not necessarily standard treatment in Army hospitals.

Hypnosis was used in a consecutive series of nine male patients undergoing arthrotomy of the knee. The results were contrasted with forty preceding cases of arthrotomy of the knee without the use of hypnosis.

The posthypnotic suggestions were that the patient would not fear the operation, the postoperative pain would not bother him, and he would be able to exercise the knee immediately after surgery.

It was noted that the experimental group slept soundly the night before the operation. The average postoperative dose of analgesia in the experimental group was about two-thirds of that of the control group. Since in the Army a patient cannot be discharged until he is able to go back to duty, the following criteria are met prior to discharge from the hospital: (1) absence of effusion; (2) absence of limp; and (3) ability to fully extend the knee ten consecutive times with a 30-pound weighted boot. The average rehabilitation time in the experimental group was twenty-seven days as opposed to forty-six days in the control group. Short term follow-up does not indicate that chronic or recurrent problems occur following earlier discharge from supervisional care.

Congenital Localized Emphysema

D. Campbell, A. J. Bauer, and T. H. Hewlett (Brooke General Hospital, Brooke Army Medical Center, Fort Sam Houston, Texas), J. THOR. CARDIOV. SURG., 41:575-586, May 1961

Congenital localized emphysema is a rare entity which appears to be due to a defect in the development of the bronchial wall. Congenital emphysema may localize in any portion of the lung, but it is usually lobar in distribution with the middle lobe the most common site.

In more than 75 per cent of the cases this abnormality causes acute respiratory distress in the newborn. In these cases the affected lobe may expand rapidly, compressing adjacent normal lung tissue, displacing the diaphragm and mediastinum until equilibrium with normal intrathoracic forces is reached. If stabilization is not rapidly attained, or proper medical treatment not received, death is the rule.

In other cases it may not follow such a fulminating course. The lung may stop expanding or expand more slowly, leaving the patient with only moderate signs of pulmonary insufficiency.

The only possible cure for this disease is surgical removal of the emphysematous segment, which will permit the remaining normal lung to re-expand.

Immediate results of resective surgery have been good. Although, permanent benefit appears to follow the removal of the diseased lobe in most cases, pulmonary symptoms have persisted in 10 per cent of the cases. This might indicate that in some cases the cartilage defect is not confined to the bronchus of the damaged lobe but may involve the entire tracheobronchial tree. Three case studies are presented.

Changes in Blood Flow, Oxygen Uptake and Tissue Temperatures Produced by the Topical Application of Wet Heat

D. Abramson, R. Mitchell, S. Tuck, Y. Bell, and A. Zoyas (University of Illinois, Chicago, Illinois), ARCH. PHYS. MED., 42:305-317, May 1961

The effects of short periods of topically applied wet heat on blood flow, tissue temperature and oxygen uptake in the forearm were shown in fifty-two experiments on fifty-one normal male subjects between the ages of twenty-one and forty years.

The application of this modality for twenty or thirty minutes produced more than a two-fold augmentation in blood flow to the forearm, with an increased circulation persisting for approximately one hour after termination of the period of exposure. Prolonged application

of heat produces neither a proportionate rise nor fall-off in blood flow, and has no advantage to its use over shorter periods of exposure.

The average total excess blood flow response to topical wet heat was 239.8 c.c. per 100 c.c. limb volume for 30 minutes exposure in comparison with 82.7 c.c. elicited by 30 minutes of short wave diathermy and 183.0 c.c. for the same length of time that Mecholyl by ion transfer was applied. Exposure to ultrasound for 20 minutes resulted in 47.8 c.c. total blood flow increase.

In the comparison of tissue temperature changes, wet heat produced a rise of 6.4° C. for skin, 5.4° C. for subcutaneous tissue, short wave diathermy elicited 1.3° C. for skin, 1.5° C. for subcutaneous tissue, and Mecholyl by ion transfer had 0.5° C. for skin and 0.6° C. for subcutaneous tissue.

In the case of changes in muscle temperature, there was a 1.8° C. increase with wet heat, 1.9° C. increase with short wave diathermy, and 0.4° C. increase with Mecholyl by ion transfer.

What Hospitalization Means to Patients

Virginia L. Larsen (Mental Health Research Institute, Fort Steilacoom, Washington), AMER. J. NURS., 61:44-47, May 1961

To accept the patient as he acts and feels, members of the medical tea must understand what he expects, what he needs and what he fears. We must see with the eyes of the patient entering the hospital.

The environment itself with its custom of taking away of personal items and clothing, of questions being asked of the patient by strangers, the jargon, smells, special costumes, unidentified noises and hospital timetable cause apprehension for the patient.

The emotional toll of hospitalization on the patient depends on his age or stage of growth. The infant, the toddler, the pre-school child, the middle grade-school child, the adolescent, the young adult, the parent with school-age children, those with adolescents, the declining adult, and finally the old adult, all have their special fears and reactions to hospitalization.

The diagnosis or the reason for the patient being in the hospital has a great impact on individual behavior. The pregnant woman, the medical patient, the patient admitted for diagnosis, the toxic and acutely ill, the patient with motor paralysis, the surgical patient or the accident patient each has individual expectations for treatment to which we must react accordingly.

The concept of the "co-operative patient" involves a closer study of the dimensions of staff-patient relationship. By understanding the needs and problems of the individual patients, appropriate help at the right time and emotional support can be given by the staff, making the patient feel a part of the recovery process.

Do "Above-Elbow Amputees" Use Their Prostheses?

Everett J. Gordon, Eleanor Dibble (Veteran's Benefit Office, Washington, D. C.), J. INT. COLL. SURG., 35:506-517, April 1961

In light of recent advances made in upper extremity prostheses, the Orthopaedic and Prosthetic Appliance Clinic Team, Veteran's Benefit Office, Washington, D. C. conducted a field study to determine: (1) if above-elbow amputees were using their prostheses more frequently than commonly believed, (2) if adjustments, modifications, terminal devices or new prostheses were needed and (3) to acquaint the veteran who had not been coming to the clinic with recent improvements.

Twenty-five unilateral amputees were studied in detail; eighteen were still using their appliances, eleven full time and seven part time. Seven had completely discarded them within a year after their initial fitting. Three non-users agreed to try a more modern appliance with the result that one is using his new prosthesis regularly and two are using theirs part time. Four non-users could not be further rehabilitated due to chronic alcoholism, severe psychiatric disorders and poor motivation.

Conclusions of this limited survey are: (1) the above-elbow amputee is a difficult fitting problem due to loss of the elbow joint, (2) the prolonged expenditure of effort and intense training necessary for successful use requires positive psychic adjustment, orientation, insight and motivation of the amputee, (3) all amputees should undergo periodic check-up examinations, (4) each amputee represents an individual problem requiring careful physical and psychic study, (5) the length of the stump and partial or full use of the prosthesis has a negative correlation, and (6) recent prosthetic improvements have increased the number of above-elbow amputees regularly using their appliances with comfort and satisfactory function.

Effect of High-Frequency Currents and Infrared Rays on the Circulation of the Lower Limb in men

J. B. Millard (Passmore Edwards Rehabilitation Centre, Clacton-on-Sea, England), ANN. PHYS. MED., 6:45-66, May, 1961

A summary of work on this question by many other investigators is presented. In this study particular attention was paid to differentiation between superficial and deep blood flow changes in response to heat. Clearance of locally injected radioactive sodium was used as an indication of blood flow at capillary level. Superficial heating was applied with a 1,000 watt luminous infrared generator at a distance of thirty inches. Deep heating was applied through short-wave diathermy using rigid disc electrodes of seven-inch diameter, one inch spacing, tuned to maximum skin tolerance. Each was applied to one lower extremity for twenty minutes. Skin, joint, and deep muscle temperatures were recorded.

Findings are reported in detail, and show that skin blood flow varies directly with temperature changes; and both superficial and deep heating produce large increases. Muscle clearance rates show only minor differences in response to superficial or deep heating. Both types produced the greatest changes in blood flow in the distal muscle of the heated limb, and to a less degree in the control limb. This effect in the opposite control limb suggests a reflex mechanism in the distal muscle, as the rise in blood flow there is much greater than that in temperature. Knee joint blood flow was greatest with deep heating. Changes in clearance due to both types of heating are small compared with the effect of a few minutes gentle exercise.

As the therapeutic use of superficial heating produces changes similar to deep heating, in conditions in which the aim is to increase blood flow in the muscular tissues, infrared radiation should produce equally good results to short-wave diathermy. Since in some instances deep heating was seen to reduce blood flow temporally, superficial heating may be safer. In twenty-five subjects, while

the average increase with deep heating was 36 per cent in the proximal muscle, four had an over-all decrease. Three patients had a "cut-off" of four to eight minutes at the onset of heating followed by a return to the initial clearance rate, and six had a "cut-off" for four to five minutes followed by an increase as compared with the initial figure. All results are given in detail.

The Prevention and Surgical Treatment of Recurrent Decubitus Ulcers in Patients with Paraplegia

B. Harold Griffith and Richard C. Schultz (251 E. Chicago Ave., Chicago 11, Illinois), PLAST. RECONSTR. SURG., 27:248-260, March 1961

Etiology of decubitus ulcers includes such factors as: continued pressure on the area, poor nutrition, uncontrollable spasticity, underlying bony prominences, and poor care of the area.

Pre- and postoperative care of ulcers is discussed. Basic principles in the surgical treatment of ulcers include: removal of ulcers and surrounding scar tissue, complete removal of bony prominences, removal of calcified soft tissue, adequate provision of skin and fat for closure of the wound, and careful final closure.

Management of ulcers in the sacral, trochanteric, and ischial areas is discussed in detail. The use of large local flaps of tissue for closure of the wound is emphasized.

For the prevention of recurrent ulcers careful planning of the closure of the original ulcer is extremely important; along with controlling spasms, good hygiene to the area, avoidance of pressure on one area for prolonged periods. Ambulation as early as possible is very helpful.

Some Principles of Sensory Receptor Action

Hollowell Davis (Central Institute for the Deaf, St. Louis, Missouri), PHYSIOL. REV., 41:391, April 1961

This review of the sensory receptors attempts to propose and elaborate an electrical theory of the mechanism of sensory receptors, and to show the relationship of this theory to a generalized concept of a typical neuron.

Some previously accepted concepts of sensory receptor action are being questioned. The idea that each sensory receptor responds only to a specific stimulus may have to be modified by evidence which shows sensations are felt as a result of different patterns produced by stimuli in the same fibers. Sensory receptors do die and regenerate and it is possible that central nervous connections may be modified by these peripheral changes to some extent. Fiber size and speed of conduction seems closely correlated with phylogenetic evolution; the newer the system, the more specific the function. A sensory fiber may have connections with several receptor cells. Changes in the sensitivity of sense organs are not well understood.

The neuron includes the cell body, the axon, which operates on the all or none principle, and the dendrite, which is chemically responsive according to the intensity of the simulus. The receptor mechanism responds like a dendrite. This theory interposes an additional process between the stimulus and the nerve impulse. Stated briefly, the mechanism of sensory receptors is this: external energy (stimulus) → receptor potential → chemical mediator (at synapse) → generator potential (in dendrite) → nerve impulse (in axon) → chemical mediator (at terminal at next synapse). Thus the action of the sensory receptors is controlled by the chemical excitability of the dendrites.

Interpretation of the Limp

James P. Akstrom (Oak Park, Illinois), J. CHRON. DIS., 13:515-532

Description and analysis of common limps is given first under anantomic headings. At the hip the mechanism and appearance of the Trendelenburg sign, painful hip gait, the "lurching" abductor gait, gluteus maximus weakness gait, and the pattern produced by hip flexion contracture are described. At the knee, quadriceps weakness may produce instability resulting in recurvatum, a habit of supporting the thigh with the hand, or of throwing the foot forward in swing phase, as well as difficulty in such activities as climbing stairs. In cases of joint injury there seems to be a reflex relationship which inhibits quadriceps action and produces rapid atrophy. Painful-knee gait includes maintenance of flexed position and short stance phase. At the ankle and foot: pain may result in short stance combined with reduced push-off; dorsiflexor weakness in a drop foot and "steppage" pattern; and plantar flexor weakness in poor "take-off". The problems of gait in clubfoot are further described.

In many cases the entire lower extremity may be involved. The scissors gait of severe cerebral palsy, "short-leg" problems, limp secondary to lumbosacral pain, ataxic gait, and the wide-based pattern of the dystrophies are given as examples.

The usefulness of bracing is mentioned briefly. It must be remembered that a limp is no more than a sign in the evaluation of a patient, just as an enlargement of the heart is a sign or physical finding. Its useful interpretation requires an understanding of normal gait as well as the pathologic processes which may produce deviations.

Osteoarthritis

William J. Tobin (Washington, D. C.,) J. CHRON. DIS., 13:495-506, June 1961

Discussion of the over-all problem and treatment needs of the osteoarthritic patient begins with a description of the osteo-pathologic changes typical of this condition. Changes in joint structures and roentgenographic findings are described and demonstrated by diagrams and photographs.

The similarity between the basic pathology of traumatic and osteoarthritis is stressed, and the problem of evaluating the degree of disability produced by trauma when superimposed on an often previously asymptomatic generalized osteoarthritis is discussed. Because clinical findings and symptoms are not always in direct proportion to x-ray evidence in degenerative joints, many persons with arthritis attribute symptoms to an injury, while actually the injury has simply exaggerated or accelerated a pre-existing arthritis.

In the absence of any known specific cure, treatment must be directed toward alleviation of symptoms and minimizing the progression of the disease. Weight control, and attention to the over-all medical condition with particular attention to osteoporosis should be routine. While rest of the involved joints is paramount, activity within the limits of pain should be permitted and encouraged. Correction of faculty body mechanics is often needed, as well as muscular strengthening exercises. Unfortunately, most of the cases are in an age group not responsive to exercise.

Some points on specific problems and management of osteoarthritis of the cervical spine, the back, knee and foot are presented.

Current Methods of Treatment: Osteoarthritis of the Spine

Robert L. Preston (Post Graduate Medical School, New York University, New York, N. Y.), ARTHRITIS RHEUM., 4:213-216, April 1961

Treatment of osteoarthritis of the spine is effective only in the control of the soft tissue element of the pathology. A symptomatic cure of the disability which results from pain produced by inflammation of soft tissue is effected. This inflammation is of traumatic origin, resulting from recurrent strains of the articulations.

In the presence of osteoarthritis, the spinal column becomes unstable and hence more vulnerable to strain as a result of (1) mechanical changes which develop in the joint, and (2) the inefficiency of the stabilizing musculature. These two areas are discussed in relation to the changes in the intervertebral discs and joints, nerve roots and stabilizing mechanisms as a result of degenerative or inflammatory processes.

If satisfactory symptomatic improvement is to be attained, the trauma-inflammation-pain cycle must be interrupted. This can be done by restoring the stability of the spine so that trauma to the articulations is minimized. This is best accomplished by decreasing the patient's activity, maintaining a good rigid posture in all activities of daily living and the use of therapeutic exercise for restoration of efficient stabilizing musculature. If spasms and inflammation are present, bed rest, heat and massage are applied until symptoms disappear. Then a graded program is carried out until an activity level which will not produce symptoms is reached. This program is continued as a prophylactic measure against insidious loss of stability.

An Analysis of One-Hundred Rehabilitated Paraplegics

Robert L. Harding (2201 North Second Street, Harrisburg, Pennsylvania), PLAST. RECONSTR. SURG. and TRANSPLANT. BULL., 27:235-247, March 1961

The goals of paraplegic rehabilitation are independent self care, mental adjustment to the handicap, intact skin, sufficient bowel and bladder management, social acceptance, and a worthwhile occupation. This article is a survey of one-hundred paraplegics over a period of ten years participating in the medical care and rehabilitation training required and the time it took to accomplish it. Most of the patients were men who had traumatic injuries of the lower thoracic cord. Results of this study included statistics covering pressure sores, bowel and bladder control, spasms which were varied in their amount, disruption of daily activities (and treatment for their relief), and a discussion of male and female sensory status before and after rehabilitation.

In concluding, the author felt paraplegics could be motivated to independence and lead active lives in a society. The results of rehabilitation warrant the time, effort and money involved; and since there are recurrent problems with these people, they should be given periodic re-examinations.

Electrodiagnosis in the Neuromuscular Disorders of Childhood

E. D. R. Campbell (Hospital for Sick Children, Great Ormond Street, London, England), ANN. PHYS. MED., 6:80-88, May 1961

The problem of clinical differentiation among the many disorders which may produce flaccid muscle weakness in children is discussed. A broad classification of such disorders includes three major groups: local causes, neurological disorders outside the lower motor neuron, and disorders within the lower motor neuron muscle fibre system. Only the latter group is discussed here. Notes on clinical differentiation are given for poliomyelitis, Charcot-Marie-Tooth Disease, Werdnig-Hoffmann's disease, infantile polyneuritis, myasthenia gravis, polymyositis, muscular dystrophies, arthrogryphosis multiple congenita, and amyotonia congenita.

Modification of standard electrodiagnostic techniques is necessary for study of these disorders in children. Strength-duration curves are of little practical value because of lack of co-operation and low pain threshold. When their use is essential they are best done under general anesthesia.

Electromyography is the technique of choice. Using coaxial needles, the tibialis anterior is tested first. Its normal potential output, early involvement in many diseases, and ease of activation by tickling the foot make it ideal. If results there are normal, a girdle muscle should be tested. The vastus medialis and deltoid are suggested. Abnormal patterns of discharge are identical to those found in adults.

Of 250 children tested in this way, about half have had normal electrical findings, thus suggesting that the cause of the hypotonia is outside the lower motor neuron system. Of the half remaining roughly a third have signs indicating Werdnig-Hoffmann's disease, a third polyneuritis, and a third myopothies. The electromyographic picture felt to be typical of each of these groups is described.

The Spring Sign

Arthur A. Michele (Dept. of Orthopedic Surgery, New York Medical College, Flower and Fifth Avenue Hospitals, New York City), NEW YORK J. MED., 61:1534-1536, May 1, 1961

The spring sign is presented as a supplemental method of detecting fractures of the internal meniscus. The test for this sign is most valuable when the conventional signs of meniscus damage are absent or at best equivocal.

A defect in the meniscus is readily detectable when it produces a deficit of the last 10° of knee extension. When the deficit is less than 10°, however, the defect is not as readily discernable. The spring test is predicated on the fact that, when an individual is in the supine position with the knee firmly fixed against the examination table, in the normal knee the heel can be raised off the table a distance of about two inches, indicating the capability of reaching the final "screw home" position.

The test is administered with the patient supine on the examination table. The examiner's forearm is held in a position midway between pronation and supination and is placed under the Achilles tendons of both legs. In this position there will be an angle of about five degrees at the patient's hip, and his heel will be about two inches off the table. When the unaffected knee is depressed by the examiner's hand, it will readily go into full extension or hyperextension. There is a springing of the knee in this position. On the affected member the knee may not go into complete extension, rarely goes into hyperextension, and the popliteal region will not touch the table.

Current Methods of Treatment: Osteoarthritis of the Spine

Edward F. Hartung (New York University School of Medicine, New York, N. Y.), ARTHRITIS RHEUM., 4:208-212, April 1961

Aching necks and backs are very common. In discussing their medical treatment, four principles must be considered: (1) etiology is usually multiple; (2) symptoms come in attacks usually superimposed by another trauma; (3) symptom-free osteoarthritis appears on roentgenograms and requires no treatment; (4) slowing the progress of symptom free osteoarthritis should be considered. The most frequent mechanically stressed areas are: lumbosacral, lower cervical, dorsal and first lumbar joints. The author details treatment for these four areas.

Bed rest is of prime importance for the cervical syndrome along with traction, analgesics, some heat and massage and improved body mechanics.

The dorsal spine problems are frequently caused by poor body mechanics and require a treatment of rest and exercises, some heat and massage and analgesics. Teaching proper body mechanics is important in the treatment of osteoarthritis of the first lumbar joint.

The lumbosacral joint is most frequently injured. Treatment consists of rest, stretching shortened fibrositic structures, and strengthening the muscles and improving body mechanics.

Physical Therapy in Relation to the Disabled Patient and the Home

Elvira P. G. Hobson (Kings College Hospital, Denmark Hill, London, S.E.5, England), PHYSIOTHERAPY, 47:133-134, May 1961

Rehabilitation must begin with a realistic evaluation by the doctor, nurse, physical therapist, occupational therapist and social worker of each patient's physical and mental capacity. Treatment goals can then be planned. The degree of achievement, however, will be strongly influenced by the attitude of relatives, the actual home surroundings, and the reaction of the community in which the patient lives. Confidence of both patient and family must be won. They must each know what is involved, and the part they will plan in the rehabilitation program. The patient is the key person and he is still an individual with an independent mind. It is well to remember that what the medical team may think best for him may not always be what he wants.

For the physical therapist, the most important task in dealing with the permanently disabled patient is to train him to manage in his home. Accurate knowledge of specific conditions is essential and may be gained through a visit to the home. Otherwise, details must be secured by questioning the patient and family. Training can then be based on both the patient's disability and the situation in which he must learn to cope with it.

The therapist can help to prevent undue physical strain on the family by teaching the patient maximum physical independence, recommending useful modifications and adaptations in the home, teaching the family how best to give necessary physical help, and by insuring that the family learns of community agencies which may be of assistance.

Consideration must be given to the development of the patient's attitudes, as well as his ability to return to work, and to participate in appropriate social activities and games. In these the therapist plays not a primary but an important part.

Some Problems of Neuromuscular Disease with Advancing Years

Thomas Gucker (Director of Rehabilitation, Orthopaedic Hospital, Los Angeles, California), J. CHRON. DIS. 13:487-494, June 1961

Paralytic poliomyelitis, spina bifida, and spinal cord injuries are discussed as examples of neuromuscular diseases in which consideration is needed of the long-term problems of aging superimposed on a chronic childhood disease. All have various considerations in common. Discussion follows of the effect of immobilization resulting from paralysis or during treatment, obesity, progressively disabling deformity, the greater energy requirements for daily physical activity, and the social and psychological repercussions of both the public and the patient's attitude toward disabled persons. The constant improvement in treatment techniques increases both the patient's chance of survival and his opportunity to benefit from specific corrective procedures. Discussion includes such information as that from a study of eleven poliomyelitis and traumatic paraplegia patients for whom crutch walking on a continuous basis using a swing-through gait was found to produce exhaustion comparable to that seen in a normal person performing a 440 yard run; and the results of a survey by the California Bureau of Vocational Rehabilitation in which only 30 per cent of the job operations studied could be handled by disabled persons.

Further discussion of each of the three disorders presents their unique problems, and at the same time points out certain common needs. Many specifically trained personnel are often required for adequate treatment. Careful evaluations are essential for proper prescription. A long-term viewpoint and close cooperation of all personnel will help to minimize secondary problems and to insure that such patients live with maximum success within the limitations imposed by disability and environement.

Endotoxin Toxity in Chick Embryo

Edward W. Hook, Charles N. Luttrell and Robert R. Wagner (Department of Medicine, The Johns Hopkins University School of Medicine and Hospital), BULL. JOHNS HOPKINS HOSP., 108:21-35, January 1961

Chicken embryos thirteen to fifteen days old develop extensive brain hemorrhages, hydrocephalus and necrosis of nervous tissue after intravenous injection of minute[1] doses of bacterial endotoxins. These lesions are apparently the consequence of widespread vascular damage produced by endotoxins. Injections of sublethal doses of endotoxin increase the resistance of chicken embryos to subsequent larger doses of lethal quantity of endotoxin. Unfortunately the present studies do not aid in defining the mechanism of acquired resistance to the action of endotoxin.

The Palmomental Reflex

Donald J. Reis (Dept. of Neurology, Korolinska Institute Serafimerlasrettet, Stockholm, Sweden), A.M.A. ARCH. NEUROL., 4:486-498, May 1961

This article reports on a study of a relatively obscure cutaneous reflex first described in 1920 in which a stimulus to the thenar eminence of the hand, usually the dragging of a sharp object, results in a seemingly inappropriate contraction of

the mentalis muscle either unilaterally or bilaterally.

As a result of their study the authors report that a discrete and reflex contraction of the mentalis muscle following palmar stimulation is present in all normal subjects if the stimulus is of sufficient strength. It was also found that the stimulation of any site on the body would elicit this contraction of the mentalis and so it was felt that the so-called palomental reflex was merely a regional variant that had a very low threshold. It was postulated that the mentalis reflex represents a low threshold plateau of a generalized somatic response to nociceptive stimuli.

It is proposed by the authors that there are in man two closely linked reflex systems activated by any noxious cutaneous stimuli: (1) a local nociceptive reflex whose functional organization is such that the reflex movements are oriented to efficiently withdraw the adjacent cutaneous area from the offending stimulus to protect the part, and (2) a generalized nociceptive reflex whose functional organization is to mobilize the animal to respond to the stimulus by fight or flight and whose function is to protect the whole organism.

The Proposed Federal Legislation for Independent Living Rehabilitation

I. Jay Brightman (New York State Department of Health, Albany), AMER. J. PUBLIC HEALTH, 51:753-759, May 1961

Committees of the eighty-sixth Congress are now considering a bill which would make federal grants available to the states to assist them in rehabilitating handicapped individuals who, while having no apparent vocational potentiality, might be expected to "achieve such ability of independent living as to dispense with, or largely dispense with, the need for institutional care, or if not institutionalized, to dispense with, or largely dispense with, the need for an attendant, thereby reducing their burden upon others . . ."

The proposed legislation, fostered by the National Rehabilitation Association, would designate the state vocational rehabilitation or vocational educational agency as the sole administrative body. Dr. Brightman opposes this plan because many other agencies are active on behalf of handicapped persons. The ultimate responsibility for the management of these individuals is part of medical care, excluding the blind and mentally retarded, who are served by separate agencies. The high cost of rehabilitation services may be met by (1) health insurance, (2) extending the welfare program to those in higher economic brackets, or (3) providing services through a special program on a case basis. The most logical decision would follow development of a series of projects to test each method. Primary administrative responsibility should be placed in the state and local departments of health, with an interdepartmental committee to permit consultation among the various professional groups concerned.

Quantitative and Qualitative Analysis of Joint Stiffness in Normal Subjects and in Patients with Connective Tissue Diseases

Verna Wright and Richard J. Johns (Department Clinical Medicine, General Infirmary, Leeds), ANN. RHEUM. DIS., 20:36-46, March 1961.

Alterations in joint stiffness produced by physiological changes, pathological disorders and therapeutic methods have been measured by rheological (study of deformation and flow of matter) techniques. Stiffness of five types was studied: elastic, viscous, inertial, frictional and plastic. In both arthritic and normal joints, elastic stiffness was the major component, with plastic stiffness being significant. Frictional and inertial stiffness were negligible and viscous was small. The relation between elastic, viscout and frictional stiffness was the same in arthritic joints as in normal joints.

Physiological variations of sex, age, temperature and edema were studied. Results showed greater stiffness in men than women, in advanced age, with edema present and with the use of cold. A decrease in stiffness appeared with the use of heat.

In normals, increased stiffness was observed with greater amplitudes of rotation. This may have been due to the property of the capsule becoming stiffer the further it was stretched, or it may have been due to stiff elastic elements, such as ligaments and capsules being slack until the extremes of joint motion were approached. In connective tissue disorders, increased elastic stiffness may have been due to residual changes in the joint capsule and not to damaged surfaces. In hereditary connective tissue disorders, such as Ehlers-Danlos Syndrome and Marfan's Syndrome, decreased elastic stiffness was noted.

Oral Immunization against Poliomyelitis

A. M. M. Payne (Yale University School of Medicine, New Haven, Connecticut), BULL. WHO., 23:695-703, 1960

The ease and economy of administration of an oral vaccine, especially in under-developed countries is desirable, but a single oral administration may not be adequate. Live virus requires careful handling to preserve its potency. The vaccine must be harmless, not only for the vaccinated persons, but also for the community. Interference by co-existing intestinal infections which are common in tropical areas may prevent successful immunization. A fully susceptible person is one without antibodies to any of the three types; there is a degree of cross protection between types, sufficient to conceal residual paralytogenic properties in attentuated strains. Satisfactory evidence of safety demands studies on several hundred thousand fully susceptible individuals living in a community in which some proportion of susceptible persons are not immunized, so as to give opportunity for natural passage. Tests with 70 million persons throughout the world have shown some strains less efficient immunizing agents than others. The Sabin strains have been thoroughly tested with children and untoward post vaccinal reactions have been insignificant. Tests of Koprowski's strains and Lederle strains are less conclusive. No strictly controlled trials comparable with the Francis trial of Salk vaccine have been done. Epidemiological evidence of efficacy was obtained in the USSR in the form of a striking alteration of the seasonal curve of polio in regions where mass vaccination was done.

The best vaccine schedule will depend on the result of future studies. The vaccines seem to have proved safe both for the community and the individual for use where polio is predominantly a disease of infancy and early childhood. Where polio affects older children and adults, the Sabin strains are safe, but there is not enough information about the other strains. In limited experience with pregnant women, no harmful effects on the fetus, nor increased abortion rate have been noted. Immunization of newborns may fail if given soon after birth. Care should be taken in administering live poliovirus to persons undergoing treatment with corticosteroids or surgery on the oropharynx.

Thrombophlebitis as a Complication of the Conservative Management of Herniated Lumbar Intervertebral Disc

B. J. Sussman, T. S. P. Finch, and B. J. Carroll (Division of Neurosurgery, Muhlenberg Hospital, Plainfield, New Jersey), ANGIOLOGY, 12:95-97, March 1961

In reviewing forty-four cases surgically treated for herniated disc, the authors found that thrombophlebitis complicated the postoperative recovery of five patients. They thought it was significant that these five were from a group of patients who had been treated conservatively with bed rest for varying periods of time prior to surgery.

The prolonged period of bed rest before surgery might have been the cause for the postoperative plebitis. In addition, traction with constructive bandaging of the lower limb which further immobilizes the patient or the jack knife position which produces pressure on venous structures might have been contributing factors.

The authors suggest that if bed rest is necessary for a prolonged period of time prior to the surgery the patient should be taught to do deep breathing and lower limb exercises to overcome the tendency for thrombus formation. If possible the patient should be ambulated for a few days prior to surgery.

Electromyographic Changes in Rheumatoid Arthritis

V. L. Steinberg and C. B. Wynn Parry (Department of Physical Medicine, The London Hospital), BRIT. MED. J., 1:630-632, March 4, 1961

Electromyographic records and intensity-duration curves were done on selected muscles in a group of patients with rheumatoid arthritis. The tested muscles were selected for one or more of the following reasons: (1) they were the site of wasting, (2) they were near affected joints, (3) they were muscles characteristically the site of polymyositis, and (4) muscle pain was present.

Electromyographic evidence of polymyositis was found in seventy-nine of ninety-three patients examined. The intensity-duration curve showed partial denervation in thirty-seven of the muscles showing polymyositis and in two muscles with a normal electromyogram. The changes had no consistent relationship to the wasting or weakness of the muscles nor to the activity or inactivity of the neighboring joints.

The authors concluded that electromyographic changes of polymyositis are common in rheumatoid arthritis, and this confirms biopsy work that shows muscles are frequently affected. This neuromuscular abnormality is one more systemic manifestation of the disease.

Ultraviolet Light Therapy: A New Type of Low Cost Unit

Milton H. Cahn and Edwin J. Levy (Dept. of Dermatology, School of Medicine, University of Pennsylvania, Philadelphia), AMER. PRACTIT., 12:268-269, April 1961

The authors describe how a standard fluorescent light fixture can be modified by using Westinghouse fluorescent bulbs, sun lamp type. A small unit for treating local areas can be made from two or four 20 watt tubes. Four 40 watt tubes may be used to treat the entire body surface.

The tubes emit a continuous spectrum of wave lengths from 2,800 to 3,500 Å. At a distance of 12 inches, the average patient receives a minimal erythema in two minutes. Heat production is minimal.

Herniated Lumbar Intervertebral Discs: An Analysis of 1,176 Operated Cases

E. S. Gurdjian et al (Wayne State College of Medicine, Detroit, Michigan), J. Trauma, 1:158-176, March 1961

Of a series of 1,176 cases of low back pain with and without sciatica treated by surgery, 65.5 per cent were males. Criteria for operation including myelography are recurring and incapacitating attacks of low back pain which are progressive in severity and may or may not be associated with neurological deficits; atrophy of leg muscles in patients with lower back pain; and surgical emergency due to ruptured lumbar disc. Conditions which mimic ruptured disc or may be associated with rupture include spondylolisthesis, old fractures with deformity, peripheral vascular disease, diabetic neuropathy, and cord tumors. Early myelography is advocated. If the study is negative, conservative management is recommended. Low morbidity is associated with myelography.

In many instances even after repeated attacks of incapacitating back pain and in the presence of negative myelographic evidence of disc protrusion the decision for surgery is still for the patient to make, especially when there is no neurological deficit. Conservative management of the patient with lumbar disc syndrome includes traction, moist heat and massage, passive exercise, wearing a proper back support, use of a firm mattress, and anodynes. Evaluation requires a two week trial of conservative measures.

Follow up of 915 patients revealed excellent and good results in 76.6 per cent of the non-compensation cases without fusion, and 61.5 per cent of the compensation cases.

The Chronic Diseases Affect Our Economy

Albert L. Chapman (Public Health Service, Washington, D. C.), AMER. J. PUBLIC HEALTH, 51:542-546, April 1961

The standard of living is directly related to the number of producers and inversely proportional to the number of consumers. The number of consumers has risen due to increase in birth rate and longevity, while the number of producers has decreased due to earlier retirement, prolongation of the average period of education, and a shorter work week. Technological progress has increased the number of units of production per man-day, thus improving standards. Chronic disease adversely affects the economy by reducing the number of producers, and by commitment of costly goods and services to the care of the ill. The number of consumers remains or increases, while the number of producers decreases, tending to lower standards. Steady financial support of research evidences awareness of this threat. Support for the application of research findings has not been as enthusiastic. So many individuals, agencies, and institutions are concerned with provision of health services that responsibility for failure of application cannot be pinned down. A local plan for providing co-ordinated and comprehensive care is indicated. Apathetic attitudes toward applying preventive health knowledge must be changed.

An increased volume of laboratory work will be needed as soon as preventive medicine is fully recognized. Accurate, economical, diagnostic and screening tests will be perfected for many diseases.

Environmental Health Needs For Hospitals and Medical Centers

Lawrence B. Hall, et al., AMER. J. PUBLIC HEALTH, 51:535-541, April 1961

One out of every seven persons will be in close association with hospitals next year. Responsibility for exposure to detrimental environmental factors of the patient and staff member is assumed by the institution. With few exceptions episodes of hospital-acquired infections, and accidental overexposure to radiation or toxic chemicals are not reported outside the hospital. New and complex diagnostic and treatment procedures have widened the health needs in the hospital. The problem is complicated by the high populations of persons in various stages of debilitation and above-average concentration of dangerous organisms. Environmental controls are also needed to minimize interference with research results. Potential health problems must be identified during the planning stages of facilities. Environmental health specialists are needed. Personnel must be educated to problems associated with patient-care and biomedical environments.

In the past, education has been confined to kitchen personnel, housekeepers, and nursing attendants. Staff assistance both in program implementation and in acceptance of rigorous environmental controls can be gained only if all professional personnel are kept aware of the problems of environmental health. Clinical personnel should be alerted to the importance of limiting traffic flow in and out of critical areas so that design air flow patterns are not reversed and so that contamination is not transported between areas. Wounds and the newborn are not to be handled with bare hands; proper aseptic technique is mandatory even for short visits to critical areas; these precautions are too frequently bypassed under the pressure of work demands. Environmental standards must be established and maintained.

Role of Voluntary Health Agencies in Planning to Meet the Health Needs of Older Persons

Philip Ryan (Executive Director, National Health Council, New York, New York), AMER. J. PUBLIC HEALTH, 51:878-882, June 1961

A voluntary health agency is an organization whose primary purpose is health related, supported by voluntary contributions, and is engaged in (1) basic and applied research, (2) public, professional, and patient-family education, and (3) service. There are currently about twenty national voluntary health agencies of significant stature. These agencies are a part of and contribute to and can learn from the entire health movement, sharing experiences and engaging in joint efforts for health improvement, rather than taking a narrow concentrated view. Many are concerned with conditions of the aging.

Voluntary health ag... can further meet geriatric he... needs by supporting research to find preventative and curative measures for the health problems of the aging—such as cancer, heart disease, mental illness, arthritis, and tuberculosis—as well as social research. They should improve public educational programs so that good legislative proposals can be supported. Increased efforts in recruitment and professional education are needed. Community planning and action should be stimulated; health, social, and economic factors are interdependent to insure that necessary services are provided. Community action by individual agencies demonstrates interest by initiating specific programs.

Federal, state, and local health councils are not voluntary agencies; they are mechanisms to help all concerned work more effectively together, by focusing attention on the problem and helping to identify and stimulate action.

Ultrasonics in the Diagnosis of Intracranial Space-Occupying Lesions

J. C. Taylor, J. A. Newell, P. Darvounis (Atkinson Morley's Hospital, London, England), LANCET, 1:1197-1199, June 3, 1961

In 1918 Langevin first appreciated and applied the properties of ultra high-frequency sound vibrations through his work with the piezo-electric crystal.

Today the technique of transmitting short pulses of low-intensity ultrasound into a medium under investigation and then detecting and calculating the position of echoes reflected by any interface which lies in the path of the sound within this medium is being used in diagnosing intracranial, space occupying lesions. When an ultrasonic beam meets an interface between two substances of different acoustic impendance, some of the energy is reflected; the remainder of the sound is transmitted through the interface into the second medium.

The examination is simple. The patient's head rests on a sandbag; the coupling agent is applied to the scalp; and the hair is flattened. The crystal probe is applied at a series of points symmetrically, on either side of the position of the midline. Echo is measured on a graduated scale and recorded for the frontal, temporal and parietal portals. Of the verified cases, the accuracy was 87 percent. The examination was misleading in 7 percent of the cases. Although this method merely detects the displacement of the midline structures above the tentorium, it has proved helpful in its diagnostic value.

The Humoral Regulation of Breathing

B. W. Armstrong, H. H. Hurt, R. W. Blide, J. M. Workman (University of Maryland, School of Medicine, Baltimore, Maryland), SCIENCE, 133: 1897-1906, June 16, 1961

The mechanisms which regulate breathing during exercise are presented in terms of a new concept that accounts for the hyperpnea of exercise and also the ventilatory responses to acid-base imbalance. The classic concept that breathing is regulated only by chemoreceptor mechanisms in the arterial blood streams (the respiratory center, the carotid and aortic bodies) has been modified in two ways: (1) It has been expanded by postulating another chemoreceptor which reacts to the composition of mixed venous blood. Thus a number of ventilatory responses can be accounted for with a unified and semi-quantitative concept based on the ventilatory response to exercise. (2) It has been qualified by questioning the assumption that the respiratory center has physiologically significant chemosensitivity. The respiratory center is considered to be, on the contrary, primarily a computing mechanism which integrates information received from chemoreceptors responding to both arterial and mixed venous blood.

The authors conclude, from data obtained from normal men at rest and during exercise, that the hyperpnea of muscular exercise may be a generally applicable expression of the ventilatory response to alterations of the composition of both arterial and mixed venous blood.

Use of Physical Therapy Modalities in the Treatment of Orthopedic and Neurologic Residuals in Hemophi.

Elizabeth Austin, Ward Rolland and Donna Clausen (California Hospital, Los Angeles), ARCH. PYHS. MED. 42:393-397, June 1961

Within a twelve month period thirty-five hemophiliac patients received physical therapy for acute and chronic neuromuscular and orthopedic deformities. Thirty-three of these patients had bleeding into one or both knees, and many had elbow and ankle involvement.

Early resolution of hematoma was attempted by the use of ultrasound beginning with .3 watts/cm.^{2} and increasing to .4 watts/cm.^{2} for two to three minutes. Daily use over affected areas produced dramatic results. Interrupted galvanism was used for five patients with less effect.

Preservation of range of motion during acute episodes was attempted by traction and splinting. Judicious active and passive exercise was employed in the presence of contractures and hot packs were applied to areas free of acute bleeding. Electrical stimulation proved effective in muscle re-education and a graded exercise program was initiated when joint pathology subsided. Resistance was added cautiously and the traditional equipment such as the quadriceps boot was avoided because of the possibility of hemorrhage resulting from stress on the ankle joint.

Possible injury to the elbows was avoided by eliminating crutches as a usual means of support and the lower extremities were protected by bracing during early stages of ambulation. Swimming for recreation was the only active sport encouraged.

The authors observed alleviation of weakness and deformity and possibly fewer acute bleeding episodes.

The Tissue Bank of the Naval Medical School and You

Daniel N. Williams and G. W. Hyatt (National Naval Medical Center, Bethesda, Md.) MILIT. MED., 126:-407-416, June 1961

The Tissue Bank, located in the National Naval Medical Center, Bethesda, has existed since 1949. Tissues currently procured, processed, stored and dispensed are skin, eyes, arteries, bone, cartilage, fascia and dura. They are excised under sterile conditions from recently deceased individuals and processed by freeze-drying with a storage potential of more than ten years, or by preservation in a living state in nutrient media, with a storage potential of four to six weeks.

Legal aspects of tissue collection vary among states. While common law implies that only next of kin may make dispositional decisions, the donor's tissue bequest is usually honored. Bequests may specify the recipient or the purposes for which parts may be used. Four-hundred donors have provided 14,000 tissue deposits utilized for more than 3,500 patients.

Legislation to assist tissue banking could make provision for tissue bequests to become automatically effective upon death, and permit tissue procurers to perform full coroner duties and responsibilities.

The Tone and Proprioceptive Reflexes of the Cervical Muscles

I. G. Antonova and M. V. Korvina (Paedriatric Medical Institute, Leningrad, USSR), SECHENOV PHYSIOL. J. USSR, 46:1648-1656, April 1961

Tonic activity and reflex reaction of the individual sternomastoid and cleidomastoid muscles of the rabbit were studied by the electrophysiological method using a two-channel cathode-tube oscillograph. In the resting state there was little electrical activity. In the natural posture the amplitude of potentials was 5 to 12 microvolts with frequencies of about 20 to 25 impulses per second. The activity in these muscles changed regularly with change in the position of the head in relation to the body. Turning the head to the right caused depression of electrical activity in the right muscles and considerable increase in amplitude of potentials in the muscles on the left. There were well marked conjugate (reciprocal) relationships between the symmetrical muscles. Changes were also seen when the head was brought down to the thorax. Active flexion caused much greater intensification of activity than passive flexion when the animal was supine. When the rabbit was sitting, active flexion failed to cause any intensification of potentials. Increase of tone in these muscles accompanies the contraction of the muscles flexing the neck to fix the head firmly and to prevent sudden sharp movements.

The results of stretching experiments showed that the reflex reaction to stretching varied with the strength of the stimulus and the functional state of the nerve centers, changes from excitation to inhibition and vice versa being possible. The reflex reactions of the cervical muscles have the essential features of a dominant (orienting-investigatory), which manifests itself in considerable increase of activity on the application of a variety of new stimuli, such as auditory, light, tactile.

Prophylactic Physical Exercises and Their Particular Relaitonship to Some Common Disorders of the Musculoskeletal System

F. J. Gray (Melbourne, Australia), MED. J. AUS., 1:858-862, June 10, 1961

The exercises presented are intended more for those engaged in sedentary occupations and are necessary supplements to any sporadic forms of exercises, such as strenuous weekend gardening, to prevent intervertebral disc lesions; lesions of the shoulder rotator cuff; osteoarthritis of the hips and knees; and metatarsalgia and postural flat feet. The precise reason for these degenerative changes may be constitutional, nutritional, hormonal, obesity, or disuse (degree of mobility which is considerably less than the requirements necessary to maintain the local musculoskeletal function at optimum level). If the region has been the site of disuse, the degenerated tissues lack the normal powers of protection against trauma. Maintenance of the maximum range of motion and maximum power and co-ordination of the muscles which control and support the joints mentioned above are important in preventing the onset of the enumerated conditions.

The eight illustrated exercises should be done each morning; no more than five minutes will be required. They are all from the standing position.

1. Abduct and adduct the arms and legs fully fifty times.
2. With feet 10 inches apart, touch the toes twenty-five times, exhaling and inhaling deeply with flexion and extension respectively.
3. Flex and extend the neck 25 times.
4. Fully rotate the head and trunk from side to side, twenty-five times.
5. Fully flex and extend the arms, crossing in front, twenty-five times.
6. Squat and rise twenty-five times.
7. Run in place fifty times.
8. Touch the toes with the opposite hand twenty-five times.

Radiation Accidents

Arlene M. Putt (State University of Iowa College of Nursing, Iowa City), NURS. OUTLOOK, 9:350-351, June 1961

The University Hospital, University of Michigan, has developed a plan for handling victims of radioactivity which provides medical care for the patients and safeguards the personnel in attendance. Emergency phone calls are handled by asking whether radioactive substances are involved, how much radioactivity is involved, the number of persons injured, and whether fractures or lacerations exist. When radiation is involved, a code call is placed to the radioisotope physician-on-call, the hospital radiation officer, and the ambulance entrance attendant.

If the patient has no cuts or fractures, he remains in an alcove near the ambulance entrance until he is checked by electrical counter. If he sustained injuries requiring treatment in the emergency suite, he is moved to a room which will be surveyed by the radiation officer before re-use. The minimum number of persons who can care for the patient are permitted in contact with him and his belongings. Rubber gloves are worn, monitoring is accomplished by the mandatory wearing of radiation badges, and items in contact with the patient as well as the rooms he has occupied are decontaminated according to the directions of the radiation officer.

Head Injuries and the Physiotherapist

Walpole Lewin (Radcliff Infirmary, Oxford, England), PHYSIOTHERAPY, 47:154-158, June 1961

The combined efforts of the doctor, the nurse and the physiotherapist are required to reduce the high mortality and alleviate some of the resultant disability of head injuries.

The pattern of recovery from the unconscious state following mild or severe cerebral concussion shows a similarity which varies only in its time span. One of the first signs of a serious complication is a deterioration in the patient's level of consciousness. Some of the possible complications are: intracranial infections resulting in fatal meningitis or brain abscess, cerebral compression resulting from hemorrhage, and pneumonia resulting from inhalation of vomitus or of blood from a fractured base of skull.

According to the author, the physiotherapist should co-operate with the nursing staff in care of the chest and should be able to use a suction apparatus in an emergency. She should time her treatments to precede and not follow a feeding. All joints of the unconscious patient need moving through their full range from the first day, and the joints should be kept in neutral position.

At least a third of patients with head injuries sustain injuries to other parts of the body; and when these are major injuries, such as fracture of the femur or chest, a considerable change may be needed in the treatment program. It is essential that the physiotherapist know what other injuries are present before beginning treatment, and that he or she report immediately anything suggesting another injury.

The physiotherapist has a major role in the rehabilitation of the patient with a mild head injury and an essential part in the management of the comatose patient.

Athrodesis of the Hip. Indications for and End Results of Such Operations

Earnest B. Carpenter (Department of Orthopedic Surgery, McGuire Veterans Administration Hospital, Richmond, Virginia) and James W. Banks, SOUTHERN MED. J., 64:777-784, July 1961

The authors believe that the many reconstructive procedures of the hip advocated in the past decade have great merit, preserve motion and relieve disabling pain. However, the end results in many patients require further definitive surgery due to pain. Arthrodesis of the hip has received little emphasis but remain a sound orthopedic procedure with a high incidence of success.

This article does not attempt to compare the advantages or disadvantages of the procedures but presents an end result study of eighteen cases of arthrodesis of the hip. All the patients were male with an average age of 43.9 years. The average period of immobilization following operation was 4.2 months. A double hip spica was applied for three months followed by either a single or one and a half hip spica cast. The greatest disability following fusion of the hip is stiffness of the knee as a result of prolonged immobilization. Knee motion exercises are recommended after the initial six weeks of immobilization. This requires altering the plaster cast to permit knee motion. Some authorities using a Kirchner wire through the distal femur for traction and holding the patient on a divided bed, begin knee exercises on the second postoperative day and after six weeks place the patient in a weight-bearing short spica for six weeks and then discard all immobilization.

The authors conclude that fusion of the hip is preferred to reconstructive procedures and is the operation of choice in relatively young persons whose occupation requires long periods of standing or walking. In the eighteen cases presented, solid fusion was obtained in seventeen instances as demonstrated by x-ray and clinical examination.

Abstracters for November

We are indebted to the following Association members for the carefully prepared abstracts that appear in this issue:

Rachel H. Adams
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Make the most of yourself, for that is all there is of you.—EMERSON

Book Reviews

Shearer's Manual of Human Dissection. *Edited by Charles E. Tobin, Ph.D., Associate Professor of Anatomy, The University of Rochester School of Medicine and Dentistry, 4th ed. Cloth, illus., 258 pp. New York: McGraw-Hill Co., Inc. 1961.*

Several additions and changes are made in this fourth edition of *Shearer's Manual of Human Dissection*. Dissection procedures for the brain, eyeball, oral cavity, middle ear and fascial spaces of the head and neck are added and in keeping with the original plan all directions remain concise and clear. Terminology is modernized in accordance with the *Nomina Anatomica* (Paris 1955) but the old B.N.A. term is also given wherever a new term is used.

By design, the manual follows a regional method and is a "compromise between the classical, lengthy manuals and the very brief guides for dissection." The new material does not alter the original purpose of a "workable balance between the amount of procedure for dissection and the descriptive text."

The present edition retains the succinct simple style of the earlier text. Most of the illustrations are the original ones made by Dr. Shearer with only slight additional guide lines or changes to enhance their usefulness. The use of bold face type of the more important structures clearly lifts them from the printed line for easy recognition and the new double column page greatly facilitates ease of reading.

The manual is an autonomous unit in the sense that it is structured independently of any specific anatomical text making the regional sequence flexible to any dissection plan. The author intends the book to be used as a guide for dissection not as a substitute for a textbook of anatomy. Therefore, the student will need to supplement his laboratory observations by study, collateral reading and integration of functional material from other sources if he hopes to *understand* the purposeful pattern of the human body.

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Neurological and Neurosurgical Nursing. *By C. G. de Gutierrez-Mahoney, M.D., Director of the Neurological Division and Neurosurgeon-in-Chief, St. Vincent's Hospital, New York, N.Y.; Clinical Professor of Neurosurgery, New York University Postgraduate Medical School; National Consultant Neurosurgeon, United States Air Force; and Esta Carini, R.N., Ph.D., Chief, Mental Health Nursing Services, State of Connecticut Department of Mental Health, Hartford, Conn.; formerly Department Head of the Neurological Division and Instructor of Neurological and Neurosurgical Nursing, St. Vincent's Hospital, New York. 3rd ed. Cloth, illus., 413 pp. St. Louis: C. V. Mosby Co., 1960. $6.50*

This is an excellent book, advanced in its approach, which can serve as either a reference or a textbook, regarding the care of the neurological and neurosurgical patient. It will be useful for nurses primarily, but also for allied disciplines to give them knowledge of the care of the patient with a neurological disability, and an appreciation of the nurse's role in the care of these patients. The book will be of interest to physical therapists who may be preparing to teach nurses regarding positioning, support and activity in neurological conditions and can serve as a useful guide to the physical therapist in translating the principles of positioning-support-activity into nursing care, to the end that the nursing care can be broader in interpretation and practice.

The two authors, one of whom has a nursing background, have had wide experience in the field of neurology and neurosurgery, in the areas of patient care and teaching. The objective of the first edition of the book was to help prepare nurses to care for the neurologically disabled patient. This objective has been adhered to in the present edition. In addition, the latest developments in neuroradiology, and the most recent advances in neurological and neurosurgical nursing, in large part related to neuropharmocology have been added. The subject matter is well presented and accurate. The authors have written with clarity of expression and with orderly transition from one topic to another. Statements are included which reflect different aspects of a given subject.

The book begins with a history of neurology, followed by anatomy and physiology of the nervous system, diagnostic study, medical therapy, and admission and discharge of a patient. Various types of patients are discussed: the overactive, underactive, and maladjusted patient, the unconscious patient, and the patient with a convulsive disorder. A discussion of patients with developmental, degenerative, infectious, and vascular diseases is next. Intracranial and intervertebral tumors, disease of the cranial nerves, and injury to the nervous system follow. There is a discussion of surgical therapy and neurosurgical treatment for selected psychiatric patients including philosophical and moral aspects of neurosurgery. Treatment of pain with emphasis on its primarily psychological nature, and medications most frequently used with neurological patients completes the subject matter.

Teamwork, follow-up, and teaching of the patient is stressed throughout the book. The part the family physician plays, and the importance of the family and the home is emphasized.

The authors discuss positioning, support, and activity of the patient at length, and relate it to the prevention of deformities and contractures. Enlisting the interest of the patient by the nurse is urged. The physical therapist is mentioned in relation to giving massage, active and passive exercises in some conditions. It would also have been helpful to include in some detail, ways in which the physical therapist might serve as a resource person to nursing service and nursing education in the area of positioning, support, and exercises within the province of the nurse.

It might also have been useful if a section had been included, and placed early in the book, devoted to the general principles of positioning-support activity from which the subsequent sections in the book relating to these subjects could have been developed. Included with this schematic drawings of range of joint motion would help to clarify the discussion.

The book is well organized. The format is uncluttered, and the type is that which can be read without difficulty. Photographs and drawings constitute an effective supplement. There are many well chosen references accompanying each chapter, and a helpful glossary is included.

Nurses, physical therapists, and other workers interested in the neurological patient will find the book valuable for a variety of reasons. It will prove to be an authoritative source book in regard to the care of patients with neurological disabilities.

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Circulatory Ulcers, A Physical Approach. *By Hilton G. Tranchell, B. D. (Yale), M. C. S. P., Superintendent Physiotherapist, Paddington General Hospital; and Charles R. Bannister, M. C. S. P., Assistant Superintendent Physiotherapist, Paddington General Hospital. Cloth, illus., 91 pp. Baltimore: The Williams and Wilkins Company, 1960. $3.50*

This small volume presents a practical approach to the problem of circulatory ulcers. It is the result of the authors' extensive experience in use of physical measures for treatment of this disability.

Contents include discussions of the general characteristics of various types of ulcers; description of the ulcer in different stages, and the significance of its site; aims and techniques of treatment; medicants; details of treatment; excision and skin graft and suggestions for organization of treatment. Statistics are given on 131 ulcer patients treated wholly or partly by physical therapy and the appendix notes details on a few typical cases.

The aims and techniques of treatment are rational, well stated and specific. Methods include zinc ionization, ultraviolet light, hot packs, faradic stimulation and massage. Proper support is stressed as possibly the most important factor in reduction of swelling. Mobilization, strengthening and re-education measures are strongly emphasized, and sample exercise programs are outlined.

Many factors are considered in determining prescription of treatment. These include all aspects of the patient's home life and occupation as well as the conditions of the limb and of the ulcer itself. Emphasis is laid on a careful and consistent routine.

The presentation is concise, clear, and detailed. Illustrations and diagrams are numerous, but quality of photographs is frequently inadequate.

Apparently the authors have had considerable success with use of physical modalities for chronic ulcers in conjunction with surgery and other therapy. Outlines of their specific routines are presented in a way that should be of value to physicians, nurses or physical therapists who deal with this problem.

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Hypokinetic Disease. *By Hans Kraus, M.D., Associate Professor, Physical Medicine and Rehabilitation, New York University; and Wilhelm Raab, M.D., F.A.C.P., F.A.C.C., F.A.C.S.M., Active Emeritus Professor of Experimental Medicine and Director of the Cardiovascular Research Unit, University of Vermont College of Medicine, Attending Physician, DeGoesbriand Memorial Hospital, Burlington, Vermont. Cloth, illus., 193 pp. Springfield, Illinois, Charles C Thomas,* 1961. $7.50

Hypokinetic is a term coined by the authors to refer to the "whole spectrum of inactivity-induced somatic and mental derangements". It is the purpose of the book to point out to members of the medical profession that lack of exercise has a role in the etiology of varied diseases. Many medical specialties are directly affected and the implications of adequate follow-through in prevention and treatment of these diseases bring in other professions such as physical education, architecture and city planning.

Dr. Kraus has been actively interested in the field of pathology resulting from under-exercise for twenty years. Dr. Raab was among the first to recognize the existence of a type of heart disease which is basically neurogenic. Both authors have been appointed to the President's Citizens Advisory Committee to the Council on Youth Fitness. The introduction by Dr. Howard A. Rusk and the foreword by Dr. Paul Dudley White bring out the importance of the theme and its careful documentation.

The subject matter covers the recognition of diseases or disabilities which result from too little exercise and the prevention and treatment of such entities. The following subtopics are presented: definition and origin of hypokinetic diseases; under-exercised youth; insufficient exercise as it relates to back pain, orthopedic disabilities, overweight, other internal diseases and emotional instability; reconditioning and prevention. Each chapter is discussed and explored from standpoint of background studies and suggestions are given for prevention and treatment. Great stress is placed on the influence of exercise in relation to heart function. Six of the fifteen chapters pertain directly to the heart and cardiovascular system and attention is given to the work being carried out in the field of cardiac rehabilitation in the United States and in Europe.

Although such rehabilitation efforts are underway in this country, no reconditioning centers for general health protection on a preventive basis have been established here. Such centers have been effectively established abroad on a large scale. It is important to the health of the individual and vital to the welfare of the nation that attention be given to the education of our physically substandard youth. Prevention must start in infancy with the opportunity for exercise; training and discipline should be carried on from infancy through adulthood. Many nations are watching and waiting for the soft Western countries to help bring on their own decline. In recent years we have become even softer as our higher standard of living and the resulting way of life require less and less physical exertion.

The writing style is readable and interesting and the type is excellent. The book is well illustrated with line drawings and photographs, tables and graphs. Each chapter is concluded with a concise summary and a bibliography.

To the knowledge of this reviewer, there is no other book available at this time which develops the theme of the implications of insufficient exercise. This work is interesting and very timely. The total topic should be important to all branches of the medical profession including physical therapy; it is also important to physical educators and to educators in general. Nationwide physical fitness program for all ages is vital to the national welfare and must be of concern to us all.

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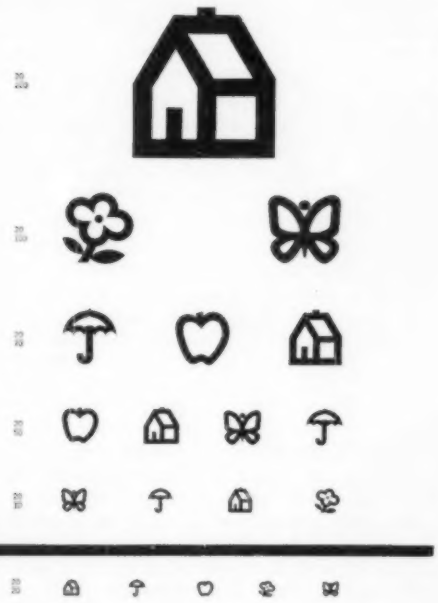
New items which may be of interest to physical therapists will be mentioned in these pages each month. The accompanying explanations are made by the manufacturers and have not been investigated by the *Physical Therapy Review*.

120. Eye Chart



Schering's Children's Eye Chart is part of a simple vision screening test for children over three years of age. Used with the special lens provided, it helps to detect impaired vision, including latent hyperopia (farsightedness), and thus facilitates screening of children in need of referral to an opthamalogist. The complete kit includes eye chart, special lens and instructions for use. Schering Corporation.

121. Tub and Shower Kit

Tub and Shower Kits prevent costly slipping accidents. A handy, compact kit for homes and all types of public institutions. Each kit contains ten strips of "Safety-Tred," pre-cut to various lengths to form an attractive pattern. Strips are available in grey, beige and black. Light scrubbing with a bristle brush, using any ordinary detergent, followed by a thorough rinsing leaves surface safe and spotlessly clean. Long-wearing the strips are easy to apply and are ready for use immediately. "Safety-Tred" is harmless to bare feet; will not scratch or irritate. Rehabilitation Equipment, Inc.

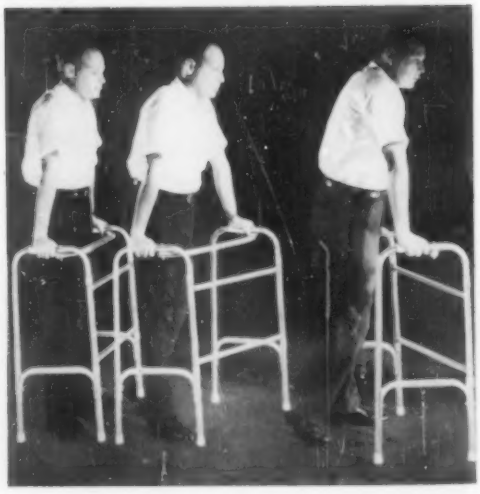
122. Vibrometer

The Vibrometer has been in clinical trial and calibration testing for two years. A light weight portable nerve threshold testing instrument, the Vibrometer measures nerve threshold by increasing the intensity until perceived by the patient. Since a reproducible threshold can be quantitated, trends of improvement or exacerbation can be determined.

With methods employed previous to the introduction of the Vibrometer, the sensory threshold for vibration is usually estimated by touching the base of a vibrating tuning fork against the part under test. As intensity decays, the point of disappearance is noted and some conclusions were drawn regarding normality. Two major disadvantages are associated with the older technique, (1) the point of disappearance requires a highly perceptive patient, and (2) quantitation is difficult.

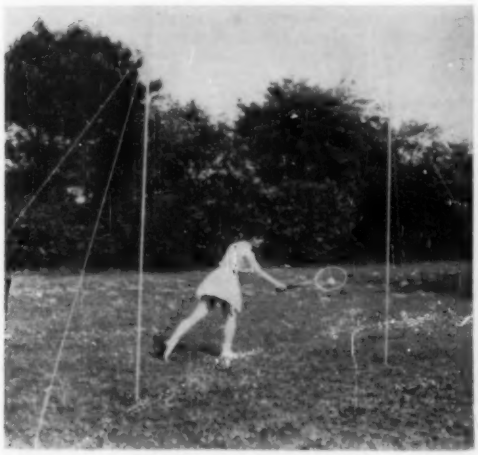
The Vibrometer, being portable, light weight and silent, is immediately available and consumes no power until used. Testing frequency is based on a 120 CSP vibration. Human engineering design techniques are employed and permit tuning ON or OFF without patient's knowledge, a numerical indexed intensity knob provides quantitation or a wide range of intensities. A special rubber knob is the only item making contact with the test area. Electro-Medical Engineering Co.

123. Walk-A-Matic



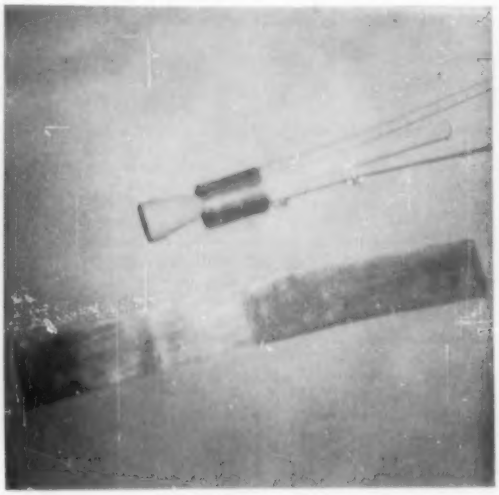
The "Walk-A-Matic" (patent pending), according to the manufacturer, practically "walks by itself." The most difficult and one of the most important actions to teach the patient who is relearning to walk is "reciprocal" action—that is left foot and right hand forward and then right foot and left hand forward. This motion is necessary for proper balance and the "Walk-A-Matic" is a reciprocal action walker. It is constructed of a combination of anodized aluminum and chrome plated steel and may also be used as a conventional invalid walker. Push-button adjustable from 32 inches to 36 inches in height, the "Walk-A-Matic" is packed one per flat shipping carton. Lumex, Inc.

124. Tennis-Trainer



Kum-Bak Auto-Tennis-Trainer permits disabled persons to enjoy the pleasure and healthful exercise of hitting a real tennis ball with a regular tennis racket, even when seated in a wheel chair. Kum-Bak consists of two sturdy aluminum poles of 9 inches, held in place by guy ropes. Between the poles is a tough tennis ball, cleverly suspended on a special type elastic which accurately reproduces the true flight of a tennis ball. Very little space is needed and the equipment can be erected indoors. Federated Products.

125. Weighting Strips



Weighting Strips are 3 inches wide by 24 inches long and weigh three pounds each. They are used for weighting canes and crutches by simply wrapping the strip around the shank of the cane or crutch and cutting off when the desired weight is obtained. Additional weights may be added or removed at any time. The strips may be removed and used again. Easily applied and removed, without the need of tools, in a matter of seconds a neat and accurate weighted crutch or cane is provided. Rehabilitation Equipment, Inc.

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Positions Available

Physical therapy practice acts have been enacted in 38 states. A listing of State Board Examinations appears in the advertising pages.

NEW ENGLAND

POSITIONS AVAILABLE—For one registered supervisor and staff therapists. Opportunity for varied experience in rapidly expanding Physical Medicine and Rehabilitation Department in 160-bed general hospital. Excellent personnel policies. Salary open. Miriam Hospital, 164 Summit Ave., Providence, Rhode Island.

MIDDLE ATLANTIC

QUALIFIED PHYSICAL THERAPIST—Recent graduate accepted. Non-sectarian residential center providing intensive treatment for 40 C.P. children. Salary open, good personnel policies. August vacation, Christmas holidays. Apply: Director, Home of the Merciful Saviour, 4400 Baltimore Avenue, Philadelphia 4, Pa.

STAFF THERAPISTS—Licensed or eligible for license in New York State wanted immediately. Applications continually accepted. Central Mohawk Valley Private Children's Hospital Center with 52 beds providing physical therapy and rehabilitation services to in- and outpatients. Recent female graduate accepted but salary open for experience. Three weeks vacation, 7 paid holidays. Apply Anthony H. Salerno, R.P.T., Chief Physical Therapist, Children's Hospital Home, 1675 Bennett Street, Utica, N. Y.

STAFF AND ASSISTANT CHIEF POSITIONS—Metropolitan Hospital, New York Medical College, Metropolitan Medical Center, 1901 Second Avenue, New York City. Clinical services; research opportunities; participation in graduate education; salary open depending on qualifications. Contact: Phyllis Kraut, R.P.T., EN 9-6300, Ext. 356.

PHYSICAL THERAPIST

For general hospital near New York City. Affiliated residency N.Y.U.-Bellevue; active physical medicine and rehabilitation program. Must be eligible for registration in New York State. Liberal benefits. Start: $4,420 with yearly increments of $290 to $5,290. Contact Personnel Supervisor, Grasslands Hospital, Valhalla, N. Y. LY 2-8500, Ext. 61.

PHYSICAL THERAPIST—With supervisory and training experience, desired at Saratoga Spa, N. Y. Must possess license in New York State. Salary range $5,320 to $6,500 per annum. Permanent Civil Service status. Director, Saratoga Springs Commission, Saratoga Springs, N. Y.

IMMEDIATE OPENING—For registered physical therapist in a fully approved 500-bed general hospital, plus a new, modern, complete physical therapy department for both inpatients and outpatients. Good salary and personnel policies. Apply: Director, Hamot Hospital, Erie, Pennsylvania.

PHYSICAL THERAPIST—Graduate of approved school, some hospital experience preferred. Currently expanding 439-bed hospital. Attractive starting salary, merit increases, paid vacation and other benefits; 37½ hour week. Apply: Personnel Department, Muhlenberg Hospital, Plainfield, N. J.

PHYSICAL THERAPIST—180-bed general hospital, newly established physical medicine department, suburban area convenient to New York, living quarters available, excellent personnel policies. Apply Chief of Physical Medicine Department, St. Clare's Hospital, Denville, New Jersey.

PHYSICAL THERAPIST—Inpatient treatment center for cerebral palsied children. Selected enrollment, excellent facilities, above-average salary and excellent personnel policies. Write Walter D. Matheny School, Peapack, N. J.

STAFF PHYSICAL THERAPIST—One vacancy in ten therapist Department. Excellent experience situation with progressive supervision. Equal proportion of pediatrics and adult cases. Salary is commensurate with experience. Vacation and benefits plan. For more details and descriptive brochure contact, Neil La Forest, Director of Patient Services, Sunnyview Orthopaedic and Rehabilitation Center, 1270 Belmont Avenue, Schenectady, New York.

PHYSICAL THERAPIST—APTA or registered, female, for 450-bed general hospital. Modern fully equipped, air-conditioned facilities for comprehensive inpatient and outpatient rehabilitation care. Extremely varied case load. Under direction of qualified physiatrist. Salary commensurate with experience and qualifications. Five day week, liberal vacation, sick leave, holiday and other benefits. Convenient transportation to New York City and New Jersey suburban areas. Apply to Personnel Director, St. Michael Hospital, 306 High St., Newark 2, N. J.

PHYSICAL THERAPIST—Male or female, with or without experience, licensed or eligible for licensing in New York State for large Cerebral Palsy Clinic, 30 miles from New York City. Salary scale from $4,400 to $5,800 depending on experience and training. Contact Miss Jean Eastman, United Cerebral Palsy of Nassau County, 380 Washington Avenue, Roosevelt, L. I., N. Y.

SOUTH ATLANTIC

PHYSICAL THERAPIST—Wanted to complete staff of six in fully equipped air-conditioned department of 215-bed general hospital. Very liberal fringe benefits, salary open. Excellent community. Contact Robert Nordham, Assistant Administrator, Morton Plant Hospital, Clearwater, Fla.

WANTED IMMEDIATELY: Two (2) Staff Physical Therapists, expanding department of an orthopaedic clinic. Department under direction of a physiatrist. Vacation, sick leave, holidays. Inquire: Arthur E. White, M.D., Anderson Clinic, South 25th Street & Army-Navy Drive, Arlington, Va.

JOB AVAILABLE—For qualified physical therapist in active community, outpatient rehabilitation center. Salary open. Apply: Miss Eleanor J. Bader, Executive Director, Delaware Curative Workshop, Inc., 16th and Washington Streets, Wilmington, Delaware.

PHYSICAL THERAPIST—One immediately, another January 1962 in air-conditioned cerebral palsy school. Five-day week, public school holidays, 1 month summer vacation, sick leave. Salary open. Contact Mrs. A. M. Inman, Executive Director, Greensboro Cerebral Palsy School, 1601 Gatewood Ave., Greensboro, N. C.

PHYSICAL THERAPIST—Opening available in a general outpatient community treatment program including physical therapy, occupational therapy and speech therapy. Affiliated with the National Society for Crippled Children and Adults, Inc. Five day week, liberal vacation and sick leave, Blue Cross Hospitalization Plan, social security. Salary open. Apply: Mrs. David L. Black, Volunteer Director, Junior Service League Orthopedic Center, 1219 Dunn Avenue, Daytona Beach, Florida.

PHYSICAL THERAPISTS—Positions in a network of 10 general hospitals. No travel required. Physiatrist in charge of physical medicine program. Consideration given to recent graduates as well as experienced therapists. Forty hour week, 4 work weeks vacation. Employee health program plus other benefits. Salary from $5,340-$6,640 or $5,880-$7,380, depending upon training and experience. Miners Memorial Hospital Association, Box #61, Williamson, West Virginia.

STAFF PHYSICAL THERAPIST—For expanding and progressive rehabilitation program in Baltimore and Hagerstown, Maryland. Salary—Staff: $4,540 with annual increments, vacation, and sick leave. New and well equipped clinics, 40-hour week, inpatients only. Apply Dr. Florence Mahoney, Director Rehabilitation Medicine, or Miss Dorothea Barthel, Montebello Hospital, 2201 Argonne Drive, Baltimore 18, Maryland.

EAST NORTH CENTRAL

WANTED—Registered physical therapist; 455-bed general hospital adjacent to college campus. Inpatient and outpatient daily load approximately 50. Fringe benefits: vacation, sick pay, health insurance, retirement plan, Social Security and annual physical. Attractive salary. Apply: Personnel office, Ball Memorial Hospital, Muncie, Ind.

PHYSICAL THERAPIST—for a four year old C. P. Center; starting salary $5,000-$5,500, up, plus increments, depending on training and experience. Prefer special training and/or experience in C.P.; if not C.P. trained or experienced, opportunity available for advanced training in C. P. with pay. Apply Mrs. S. L. Zieve, Coordinator, Cerebral Palsy Center, P.O. Box 294, Elyria, Ohio.

WANTED—Registered physical therapist, male or female. Four-doctor orthopaedic clinic with separate PT Department. Write for details to M.K. Nusbaum, Mgr., 2609 Fairfield, Fort Wayne, Ind.

REGISTERED PHYSICAL THERAPIST OR CERTIFIED—Excellent opportunity to participate in interdisciplinary team of physicians, physical, occupational, speech and music therapists. Adult outpatient rehabilitation facility in hospital setting. Liberal personnel policies. Salary open. Apply Administrator, Mary Free Bed Guild Children's Hospital and Orthopedic Center, 920 Cherry St., SE Grand Rapids 6, Michigan.

STAFF PHYSICAL THERAPIST—For 400-bed private general hospital with large active volume outpatient department. Liberal salary range and employee benefits. May be experienced or recent graduate. Licensed in Wisconsin or eligible to take license examination. Well-equipped, air-conditioned department. Excellent working conditions in one of midwest's foremost institutions. Centrally located in city and convenient to outstanding residential and shopping facilities. Contact Personnel Director, Milwaukee Hospital, 2200 W. Kilbourn Ave., Milwaukee 3, Wisconsin.

MUNICIPAL HOSPITAL of 708 beds needs two registered physical therapists (male and female) for expanded outpatient and inpatient program with wide variety of cases. Liberal personnel policies, 40 hour week, 2 weeks vacation, and sick leave. Write to R. E. White, Personnel Office, Hurley Hospital, Flint 2, Michigan.

PHYSICAL THERAPIST for general hospital work. Completely new facilities, four therapists, University affiliation. Complete program of benefits including three weeks vacation to start. New 100-bed rehabilitation-oriented facility being developed for chronically ill. Write: Mark Slen, Assistant Administrator, Parkview Memorial Hospital, Fort Wayne, Ind.

STAFF POSITION FOR REGISTERED THERAPIST—Busy department in 850-bed general hospital. Variety of cases. Many employee benefits including 3-week vacation, free laundry, free Blue Cross after one year. Living accommodations available. Contact John B. King, Director of Personnel, Presbyterian-St. Luke's Hospital, 1753 West Congress Street, Chicago, Illinois.

PHYSICAL THERAPY POSITIONS available in Institute Departments located in three Peoria hospitals. Excellent education opportunities, both clinical and didactic. Three weeks vacation per year, sick leave, insurance benefits, 6½ holidays per year. Complete physical medicine and rehabilitation program under supervision of physiatrist. Progressive salary scale commensurate with experience and meritorious service. Apply Medical Director, Institute of Physical Medicine and Rehabilitation, 619 N.E. Glen Oak Avenue, Peoria, Ill.

STAFF PHYSICAL THERAPISTS—Positions available. Salary range $4,800-$5,600. Starting salary based on experience. Merit increases, 40-hour week, 3 weeks vacation, holidays, sick leave, health and life insurance and retirement plans available. Affiliated with Wayne State University Medical School and developing PT school. Comprehensive rehabilitation program for inpatients and outpatients and PT for 650-bed general hospital. Graduates of approved schools of PT and should hold membership in APTA and/or Registry. Contact Mrs. T. J. Kohne, Personnel Director, Rehabilitation Institute, Inc., 261 Brady, Detroit 1, Michigan.

PHYSICAL THERAPIST—Eligible for licensing in Ohio. Staff position in 1,000-bed service, research and teaching hospital. Expanding department with wide variety of cases. Physiatrist in charge. Liberal personnel policies, three week vacation. Salary dependent on experience. Contact Miss Helen Schroeder, Co-ordinator of Physical Therapy, University Hospitals of Cleveland, 2065 Adelbert Road, Cleveland 6, Ohio.

PHYSICAL THERAPIST—For children's convalescent and rehabilitation center. Excellent working conditions and personnel policies. Continual contact with doctors. Apply Chief Therapist, Convalescent Hospital for Children, Cincinnati 19, Ohio.

REGISTERED STAFF PHYSICAL THERAPIST—Licensed or eligible for Indiana License, for new and well equipped physical medicine and rehabilitation department under the direction of a full-time physiatrist, in a 900-bed general hospital which offers a great variety of cases, mostly acute. Starting salary in accordance with experience; 5 day, 40 hour week; 3 weeks vacation after one year's employment, and other liberal fringe benefits. Apply to: Felix Millan, M.D., Assistant Director, Physical Medicine and Rehabilitation Department, The Health and Hospital Corporation of Marion County, 960 Locke Street, Indianapolis, Ind.

PHYSICAL THERAPIST—For University of Wisconsin Hospitals in 700-bed teaching and research hospital at main campus on Lake Mendota. Well-equipped department and excellent opportunity for personal advancement. Merit increases and liberal personnel policies. Must be graduate of accredited curriculum in physical therapy and eligible for licensure in Wisconsin. Write: Personnel Office, Wisconsin Medical Center, Madison 6, Wisconsin.

PHYSICAL THERAPIST—The Ohio State University Hospital. Excellent opportunity for graduate work. Faculty privileges; Group Blue Cross and Blue Shield Plans available, paid vacation, holidays, sick leave, free Major Medical Expense Insurance and Group life insurance. Write Dr. Ernest W. Johnson, Physical Medicine Department, University Hospital, 410 W. 10th Avenue, Columbus 10, Ohio.

PHYSICAL THERAPIST—Male or female, A.P.T. To work in expanding rehabilitation hospital. Newly equipped, air-conditioned. Excellent starting salary; regular increases; paid vacation, sick leave and holiday benefits. Life insurance and welfare pension programs available. Write: Miss Paula Bennett, Rest Haven Rehabilitation Hospital, 1401 South California Boulevard, Chicago 8, Ill.

REGISTERED STAFF PHYSICAL THERAPIST—Immediate opening for 259-bed general accredited hospital. Treating in- and outpatients, largely adult. Opportunity for varied experience. Five day week, paid vacation, sick leave. Salary $4,680. Apply Personnel Dept., Wm. Beaumont Hospital, Royal Oak, Mich.

PHYSICAL THERAPIST—Exceptionally well equipped air-conditioned department. Wide variety of in- and outpatient treatment. Experience not necessary. Excellent starting salary 300-bed general hospital. Write John E. Paplow, Executive Director, Lima Memorial Hospital, Lima, Ohio.

EAST SOUTH CENTRAL

PHYSICAL THERAPIST—Graduate accredited school. General hospital. New, well equipped department in operation 6-7 months. Duties primarily that of therapist and supervision of aides. Salary open. Under supervision of physiatrist, may work directly with staff orthopedists when indicated. Pension and Social Security benefits. Liberal holiday, vacation and sick leave. Climate agreeable in east Tennessee university town. Contact: East Tennessee Baptist Hospital, Knoxville, Tennessee.

PHYSICAL THERAPIST—For crippled children's hospital. Start immediately. Pleasant surroundings; liberal personnel policies; salary open. Hospital of 100 beds with variety of patients offers challenging opportunity. Recent graduate considered. Apply to: Miss Anna B. Quinn, Kosair Crippled Children Hospital, 982 Eastern Parkway, Louisville 17, Kentucky.

PHYSICAL THERAPIST—For sixty-five bed Community Hospital located on College Campus. New, very complete department serving all types of patients. Excellent community for family or chance to take College Courses while employed. Contact, Adm., Berea College Hospital, Berea, Kentucky.

WANTED—Qualified physical therapist for expanding outpatient rehabilitation center, treating both adults and children, 40 hours, 5 day week. Salary range $4,500 to $6,000. Contact L. O. Dees, Rehabilitation Center, 316 Longwood Drive, S. W., Huntsville, Alabama.

WEST NORTH CENTRAL

PHYSICAL THERAPISTS—Beginning rate $5,040 per annum. Vacations, sick leave, holidays, insurance, professional laundry and other benefits. New 120-bed rehabilitation center offering complete services to rehab patients and patients from the Acute Adult and Children's wings of main hospital. Work under the direction of two physiatrists. Inquire Personnel Department, Iowa Methodist Hospital, Des Moines, Iowa.

WANTED—PHYSICAL THERAPISTS

For physical therapy department which is part of a general hospital in St. Louis, Mo. Service under the direction of a full time physiatrist. Good starting salary, fringe benefits, 40 hour week. Reply to: Box 1, Physical Therapy Review, 1790 Broadway, New York 19, New York.

REGISTERED PHYSICAL THERAPIST—Male, to associate with one other therapist; clinic and hospital work; excellent benefits; beginning salary $450 per month. Dakota Clinic, 1702 So. University Drive, Fargo, N. D.

PHYSICAL THERAPIST—Staff position in clinic of five orthopedic surgeons. Inpatient and outpatient cases, five day week, paid vacation and holidays, other benefits, convenient location. Contact W. Campbell, Business Manager, Dickson-Diveley Clinic, 4312 J.C. Nichols Parkway, Kansas City, Mo.

PHYSICAL THERAPIST WANTED—Salary depending upon experience and training. Forty hour week, liberal working conditions. New hospital seventy miles west of Minneapolis, Minnesota. Contact Arthur Brown, Meeker County Memorial Hospital, Litchfield, Minn.

PHYSICAL THERAPIST—For a well equipped department in a 520-bed general hospital with referrals on both hospitalized and out patients. Forty hour week; paid vacation and holidays; sick leave; and retirement plan. Starting salary depends upon experience—yearly increases provided. Contact Jack Davis, Personnel Director, Wesley Hospital, 500 N. Hillside, Wichita, Kansas.

WEST SOUTH CENTRAL

IMMEDIATE OPENING—Registered staff physical therapist for new, modern, well equipped and air-conditioned department. Two weeks vacation, sick pay, and malpractice insurance, 8 holidays plus week between Christmas and New Year. Salary: open dependent upon experience and qualifications with annual increments. Apply to: E. D. Jordan, Executive Director, Southwest Louisiana Rehabilitation Center, P.O. Box 2705, Lafayette, La.

MOUNTAIN STATES

REGISTERED STAFF PHYSICAL THERAPIST—Female. General 200-bed J.C.A.H. hospital. No experience necessary. Excellent salary, 40 hour week, liberal fringe benefits. Paid vacation and sick leave, 7 paid holidays. Attractive nurses' home, room and board $43 monthly. Contact Administrative Assistant, Memorial Hospital, Cheyenne, Wyoming.

ARIZONA OPENING—As Staff Physical Therapist with twenty-three doctors in private medical clinic. Starting salary $350-$450, depending on experience. Write to Walter McCarrell, R.P.T., The Tucson Clinic, 116 North Tucson Boulevard, Tucson, Arizona.

EXPERIENCED REGISTERED PHYSICAL THERAPIST—Currently expanding 100-bed general hospital. Salary open. Contact Business Manager, St. Joseph's Hospital, Lewiston, Idaho.

PACIFIC

GRADUATES OF APPROVED SCHOOLS FOR PHYSICAL THERAPISTS: You may now practice under professional supervision in this State pending registration with the California Board of Medical Examiners. Positions open in State Hospitals, the Veterans Home, and special schools for handicapped children. Starting salary $458, higher in some locations; liberal employee benefits; promotional opportunities. Streamlined civil service examinations twice a month in San Francisco and Los Angeles, and on request in other states near candidate's residence. Write: State Personnel Board, 801 Capitol Avenue, PT 71, Sacramento 14, Calif.

SAN DIEGO COUNTY
CRIPPLED CHILDREN'S SERVICES

Graduates—Approved schools for Physical Therapy. Positions open in special schools for handicapped children. Starting salary $507; liberal employee benefits. Temporary appointment pending California registration. Write Dept. Civil Service and Personnel, Rm. 403, Civic Center, San Diego, Calif.

REGISTERED PHYSICAL THERAPIST—221-bed accredited hospital; 30-bed rehabilitation center, well equipped. Starting salary $464. Must be eligible for California registration. Living accommodations on grounds for single person, nominal charge. Vacation, sick leave, retirement, Sierra foothill community. Apply Tulare-Kings Counties Hospital, Springville, California.

REGISTERED PHYSICAL THERAPIST—Staff therapist needed for 311-bed general hospital. Starting salary $412. Liberal employee benefits. Ideal location. Apply Dr. David M. Caldwell, Santa Barbara General Hospital, Santa Barbara, California.

STAFF PHYSICAL THERAPISTS—For outpatient department under the direction of a physiatrist. Hollywood-Beverly Hills area. Must be registered and qualified for California State Registration. Excellent salary commensurate with experience. Automatic increase after three months. Forty hour, 5-day week. Paid sick leave, vacation and holidays. Additional benefits include complete health plan coverage and life insurance. Reply to: Doris M. Beswick, R.P.T., So. California Permanente Medical Group, 130 No. LaCienege Blvd., Los Angeles 46, California.

REGISTERED PHYSICAL THERAPIST—(man or woman) for 115-bed general hospital. Immediate opening; 5-day week, paid vacation, sick leave, 6 paid holidays. Salary dependent on experience. Must be eligible for California registration. Located resort coast village overlooking Pacific Ocean. Apply Personnel Manager, Scripps Memorial Hospital, LaJolla, California.

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The right to reject an ad or to change wording in accordance with Association and editorial policy is retained by the publisher. Institutions or agencies placing ads must identify the director *(John Doe, M.D., Medical Director) in the content of the ad or in the covering correspondence.*

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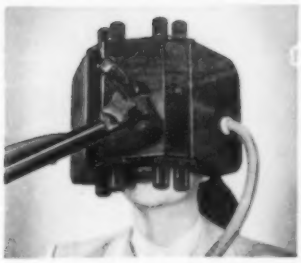
Information desired as to the whereabouts of Elizabeth Betts Walls, at one time a physical therapist associated with the Orthopedic Hospital, Philadelphia. Write S. L. Thornton, Esq., 2004 Finance Building, Philadelphia 2, Pennsylvania.



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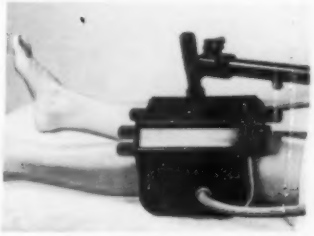

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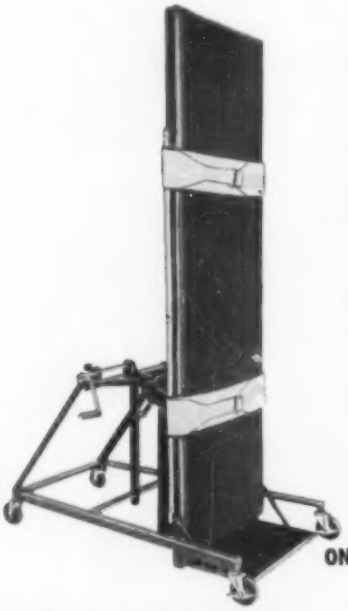

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